March, 1958

SOAP and CHEMICAL SPECIALTIES

...n this issue...

...erine outlook for '58 bright fol-...g record '57 . . . . . Page 47

* * *

...r aerosol protective coatings for ...-yourselfers . . . . . Page 93

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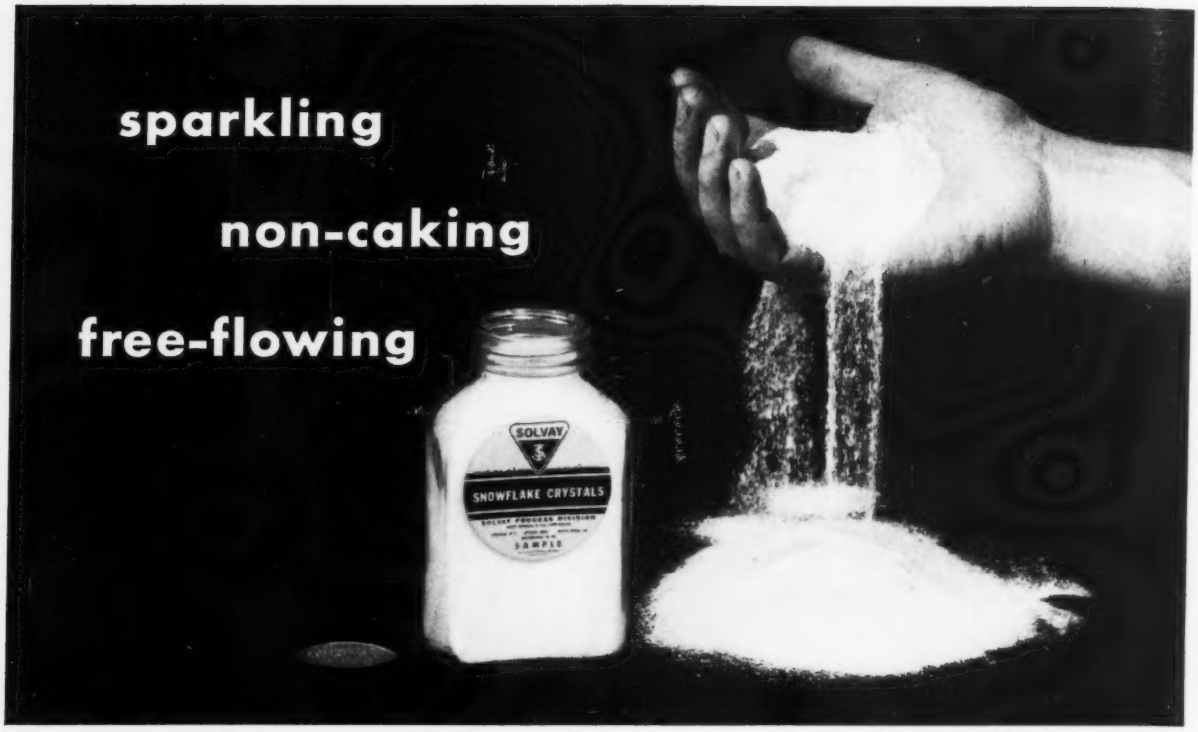
...ethylene's success in floor ...s is spreading . . . . Page 97

* * *

...r pesticides look promising in ...roach control . . . . . Page 91

...ewest additions to "French Mist" ...ne of aerosol products of Strouse, ...nc., Norristown, Pa., are "South-...rn Pine" and "Breezy Spice" air ...resheners. Loaded in six-ounce ...rown "Spra-tainers" by Strouse, ...ans are equipped with Precision ...alves and Gilbert Plastics' protec-...ve caps in pastel colors to match ...hose of cans.



SOLVAY SNOWFLAKE CRYSTALS

No other form of alkali has all these advantages!

1. **sparkling**
2. **non-caking**
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5. **highly soluble**
6. **quick dissolving**
7. **excellent water softener**
8. **active detergent**
9. **efficient buffer**
10. **excellent acid neutralizer**
11. **adds bulk**

Your product or process may benefit from 11 *important features* combined in Snowflake Crystals and Snowfine, SOLVAY's two superior forms of sesquicarbonate of soda.

Snowflake and Snowfine, the two granulations, are used in many products—from household and industrial cleansers to luxury bath preparations . . . and in numerous basic industrial processes. It will pay you to look into this unique alkali.

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Aluminum Chloride • Sodium Nitrite
Potassium Carbonate • Caustic Soda
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Snowflake® Crystals • Vinyl Chloride
Ammonium Chloride • Calcium Chloride
Chlorine • Soda Ash • Methyl Chloride
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Chloride • Monochlorobenzene • Mutual
Chromium Chemicals • Hydrogen Peroxide
Paradichlorobenzene • Cleaning Compounds • Carbon Tetrachloride

SOLVAY branch offices and dealers are located in major centers from coast to coast.

Allied Chemical

SOLVAY PROCESS DIVISION
ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y. **BL-3**

Please send me without cost:

☐ Snowflake Crystal sample ☐ Snowfine sample
☐ Snowflake fact book ☐ Data on how Snowflake can help my operation, described in attached letter.

Name _____

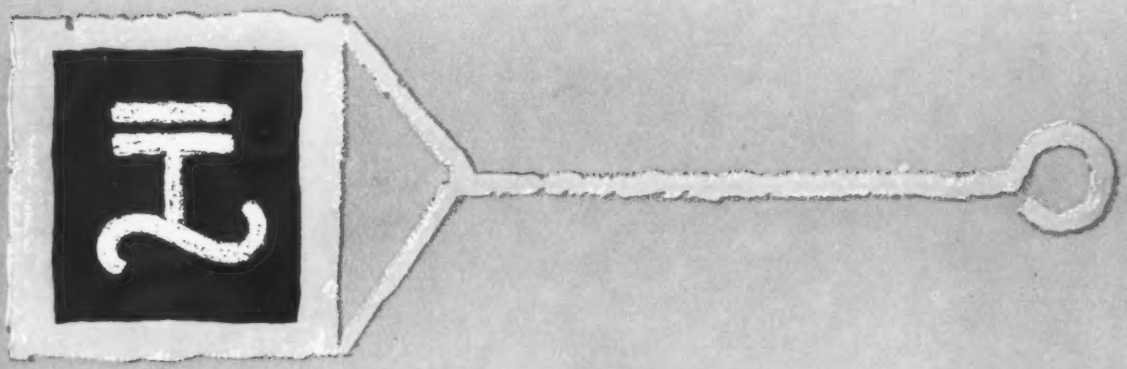
Position _____

Company _____

Phone _____

Address _____

City _____ Zone ____ State _____



DO YOU UNDERSTAND WHAT THIS N BRAND STANDS FOR?

Money, it stands for, mostly.

Use good scents, Norda scents, to make money. Products perfumed for any purpose seem to have the smell that will sell, when Norda odors make them distinctive. "With Norda scents" brands the best, quite often.

Norda makes good scents

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Samples, free, by sending your business letterhead to

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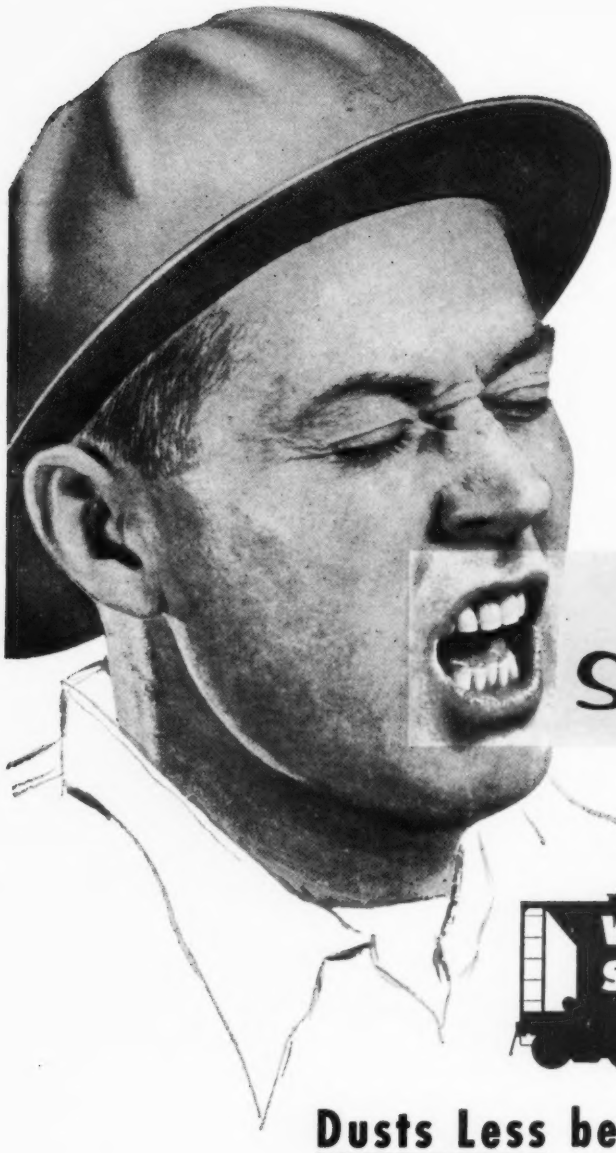

you won't
Sneeze in a Breeze

Dusts Less because it has Fewer Fines

Toss a handful of Westvaco Soda Ash upwind and you'll instantly see that it is essentially dust free—when made, when shipped, when unloaded *and* when used.

There's a good reason why!

Westvaco Soda Ash is different and better. It is composed of billions of tiny, needle-like crystals which degradate less in handling . . . don't break down into fine dust . . . don't create dusting problems. In addition, our Soda Ash is of uniformly high purity, free-flowing, low in iron and other discolorants. It disperses and dissolves quickly and completely.

We'd like to quote on a fair share of your needs. It's quite possible that you can get premium-quality Westvaco Soda Ash without paying a penny more. So let's talk things over—soon!

fmc
FOOD MACHINERY AND CHEMICAL CORPORATION ®

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION
Westvaco Chlor-Alkali Division
General Sales Offices:
161 E. 42nd STREET, NEW YORK 17

Volume XXXIV, No. 3 March, 1958

SOAP and CHEMICAL SPECIALTIES

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35th Anniversary...ang

For 35 years Felton has made its successful products a by-word in the industry. Through resourceful and imaginative effort, and an inherent flair, Felton has achieved a position of prideful importance. In the many years to come Felton will continue to be a source of rich inventiveness and fluent skill in transforming industry needs into new developments for greater success.

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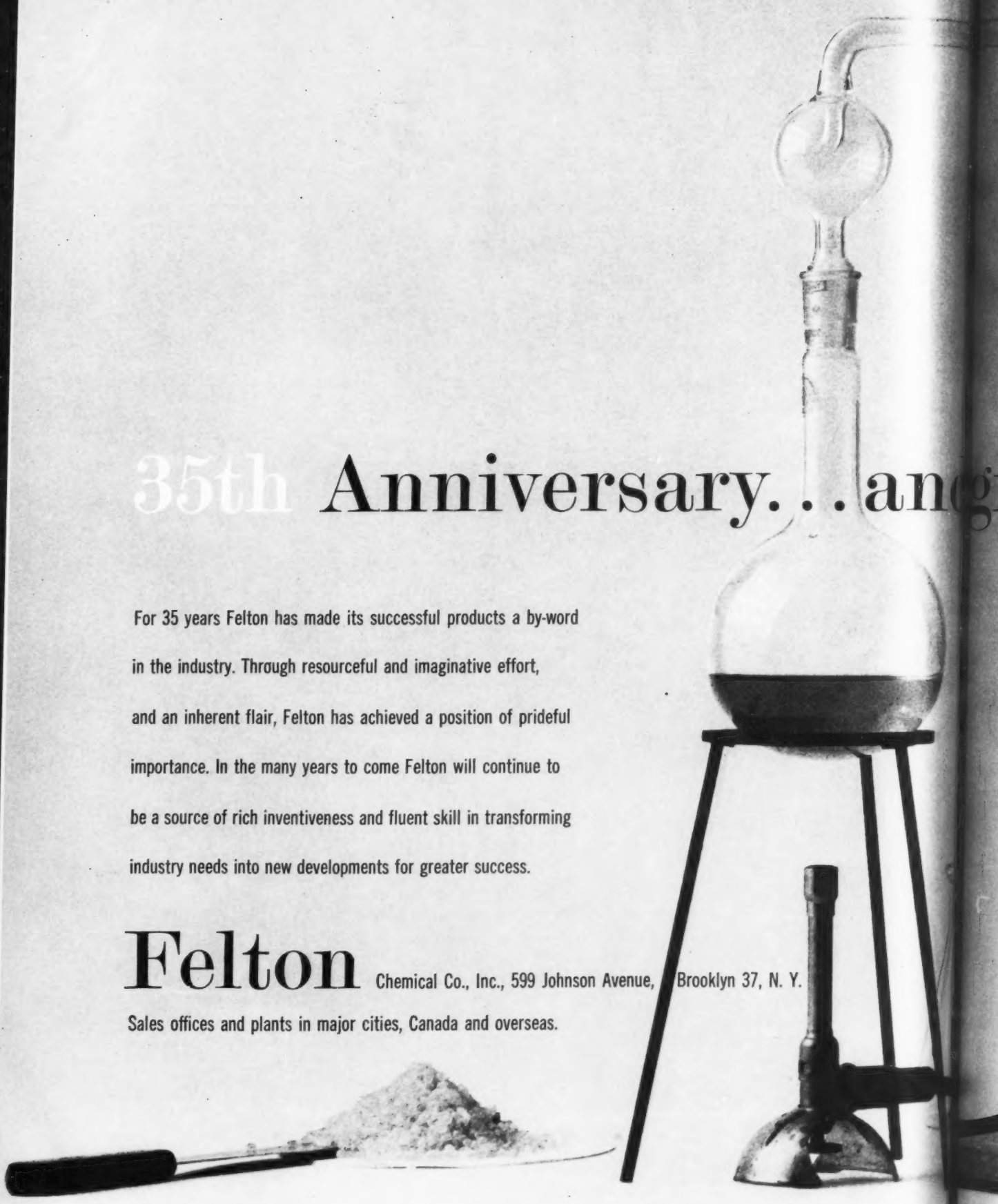

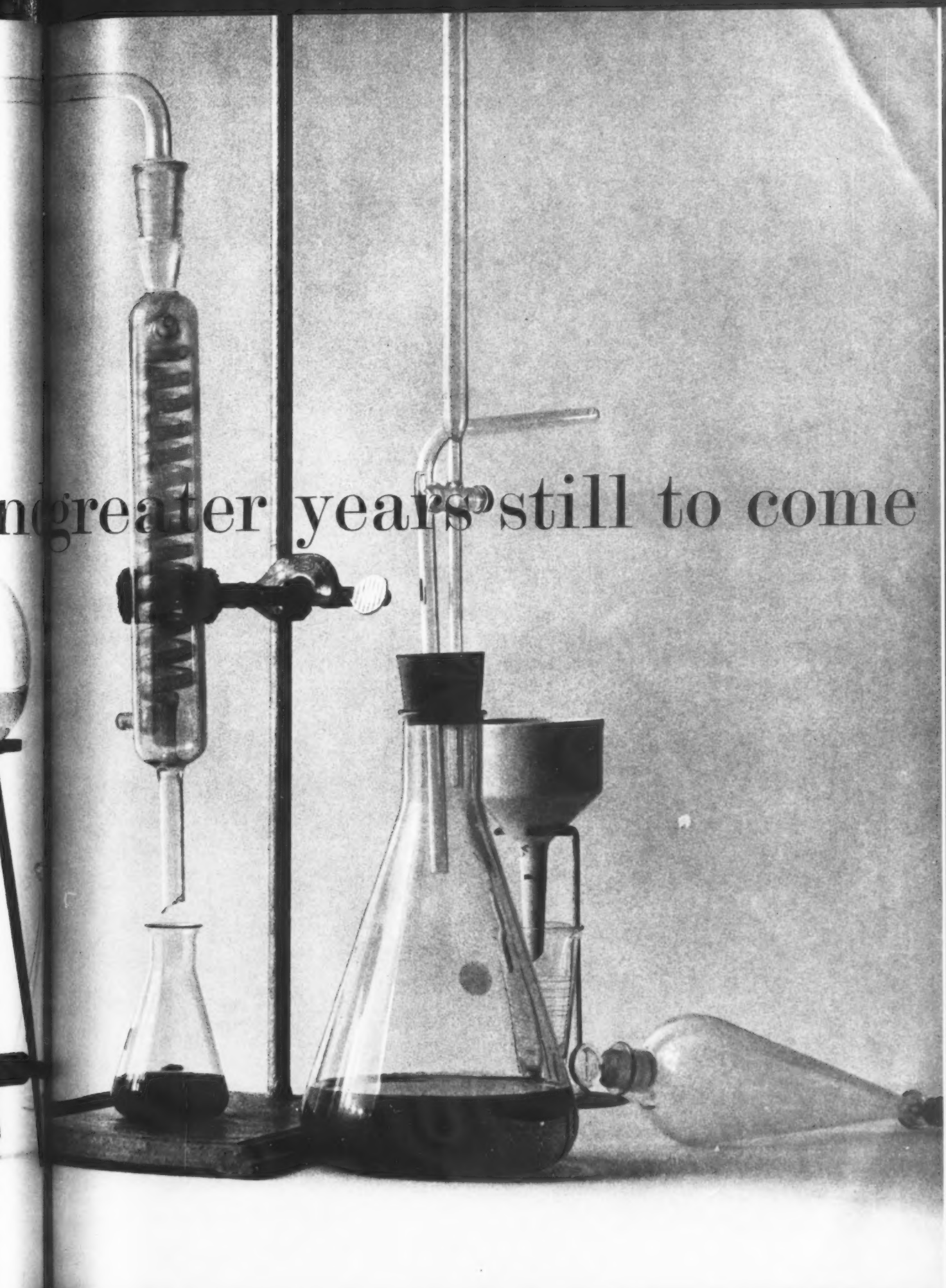
ngreater years still to come

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HYPURITY ALKYLOLAMIDES

for use with other surface-active agents in

DISHWASHING DETERGENTS • SHAMPOOS • BUBBLE BATHS • INDUSTRIAL CLEANSERS

LIGHT DUTY LIQUID CLEANERS • FLOOR CLEANING PREPARATIONS • TEXTILE DETERGENTS

Conventional alkylolamides have long been made by condensing two moles of diethanolamine with one mole of fatty acid. The excess quantity of diethanolamine was considered necessary to prevent the formation of undesirable ester-amide at the expense of the true surface-active agent. The conventional alkylolamides, therefore, contain about 60% alkylolamide, with the remainder being unreacted diethanolamine and diethanolamine soap.

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Nopco manufactures a complete line of surface-active chemicals, and manufacturers who place a single order for all their needs make a dual saving—they qualify for quantity price discounts and they save on freight.

ADVANTAGES OF NOPCO HYPURITY ALKYLOLAMIDES
when combined with other surface-active agents

- *They build and stabilize foam*
- *They increase the viscosity of liquid detergent products*
- *They improve detergency and wetting*
- *They inhibit rusting of steel containers*

Write today for samples and literature on the Nopco Hypurity Alkylolamides:

Hyonic LA-96 • Hyonic LA-90 • Hyonic LA-70
Hyonic LA-50 • Hyonic LA-45 • Hyonic LA-40

Let Nopco chemists help tailor your product to your exact performance and sales requirements. They are waiting to go to work for you. Nopco Chemical Company, Harrison, N.J.

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GALLUP SURVEY REVEALS FOR ANISE FLAVORING IN

Are You Overlooking Profitable Markets as Shown in This Nationwide Survey.....▸

There are many appetizing flavors on the market today, but here's one that appeals strongly to one out of every three adults in the U. S.

It's anise—made in this country under the name of anethole.

Anise, or the closely similar licorice taste, has a strong army of supporters—as shown by a recent Gallup Survey—to merit its use in many products where a variety of flavors is now offered.

Perhaps one reason why anise, in recent years, has been overlooked is the unreliability of supply of oil of anise from Red China.

Today, American-made anethole is available in full commercial quantities, meeting U.S.P. specifications. Manufactured under rigid quality controls, and from a plentiful domestic raw material source, anethole opens the way for you to include anise-flavored products in your line without worries over fluctuations in supply.

Ask your regular supplier for Hercules® anethole or flavors based on anethole.

HERCULES POWDER COMPANY
INCORPORATED
Wilmington 99, Delaware

IN HARD CANDIES

IN CHEWING GUM

IN CAKES & COOKIES

This survey was conducted in March, 1957 by Audience Research, Inc. as part of its National Opinion Trends reports and is reproduced by permission of the Gallup Organization, Princeton, N. J. A total of 1,627 personal interviews, consistent with the distribution of the adult population, were conducted by trained Gallup Poll interviewers. Since "anethole" and "anise" are both terms unfamiliar to the majority of the American public, the flavor was first described as "licorice." When

HERCULES ANETHOLE

SUBSTANTIAL PUBLIC VOTE FOODS AND CONFECTIONS

44% WOULD LIKE

31% WOULD LIKE

30% WOULD LIKE

specific preferences in cakes, candy, and gum were asked, the respondent was told "there is a flavor called anise which resembles licorice . . . suppose the following products were made with a mild licorice flavor or anise taste?" Since it is recognized in the chemical industry that anethole, U.S.P., is equivalent to imported anise, and has been used for years, the findings of this survey on anise flavor preferences can readily be applied to anethole.

Further Facts from This Survey on Public Preference for Anise

- Nearly 34,000,000 adults (based on the estimated U. S. adult population of 103 million) are real fanciers. Also, another 16,500,000 adults like the flavor.
- A larger proportion is in the upper economic group.
- There is a slightly larger proportion of women than men fanciers.
- More younger adults than older persons say the anise flavor would appeal to them.
- Strongest regional areas of preference are the East and the West, and in communities of over 500,000 population.
- Those that like the flavor are strongly in favor of it!

NCS7-1

HERCULES ANETHOLE

For private brand resale buyers of waxes and kindred products ...Your Quality Guide

WATER EMULSION WAXES
Each of Candy's floor waxes are all-around top quality for certain traffic conditions. They impart the finest protection and beauty to floors for which best suited.

CANDY'S SUPREME (standard)
BRIGHT BEAUTY®
CANDY'S SUPREME Special WR
SUPER CAND-DOX®
CAND-DOX® #CS
CANDI-WAX #6000

All Candy's products are available for private brand resale and are sold only through distributors except for experimental accounts in Chicago essential to research.

Beauty and Durability

Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to abrasion of traffic, but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

Anti-Slip

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax...beauty and protection.

Water Resistance

Frequent damp mopping or wet traffic can make water resistance very important. Over-doing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

Solid Content

The percentage of solid content is not nearly as important as the quality of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Over-waxing and resultant greater difficulty in removal for periodic maintenance may do more harm than good.

Carnauba Wax

The most important features of a good wax...all-around quality of performance...are built around Carnauba Wax. When refined and compounded with other additives and scientifically controlled in manufacture, Carnauba alone imparts the beauty and protection that makes the use of floor waxes both profitable and possible. Make-shift manufacture or over-emphasis on any one given wax feature should be avoided and proper care taken to provide for most satisfactory performance.

Other HIGHEST QUALITY products of CANDY & COMPANY, Inc.

CANDI-COAT 1000, WATER RESIN EMULSION
As a floor coating for use under specific conditions of continued maintenance on certain types of floors this water resin emulsion has none of the faults associated with coatings of this type. It is the finest product in its class produced up to this time.

Bright Beauty WAX REMOVER & all-purpose SURFACE CLEANER
For removal of water-emulsion waxes from any floor without harmful effects. It is the perfect maintenance program wax remover and all-purpose surface cleaner. Pleasant odor, crystal clear color and thorough cleaning action with all types of equipment. Unaffected by hard freezing. Furnished ready for resale or in concentrated form for local packaging...nothing but water to buy or mix in.

Bright Beauty CREAM FURNITURE POLISH
A cream furniture polish that spreads easily, polishes without excessive effort to a deep impressive lustre. Permits *repeated repolishing* with a dry cloth, thus saving many re-applications. A very economical polish of the very highest quality.

Bright Beauty PASTE WAX
Properly blended and refined from excellent quality solids and solvents that produce the best drying time and evaporation. Easy to handle, having "creamy" consistency and stability that lasts throughout storage and usage life.

Bright Beauty LIQUID (spirit) PREPARED WAXES
A complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each acts as a "dry cleaner" to keep surfaces waxed protected with a superb coating necessary for many applications such as wood and certain other types of floors; for bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH
As a glass cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanliness to glass. As a cleaner of silver, it polishes to a high lustre *without* abrasion and can even correct the abuses of scratchy "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX
Does not "ball-up" and gather dirt that impregnates floors with hard spots difficult to remove...free from dusty effects. Its protective quality adds more "floor-years" to expensive ballroom floors.

Bright Beauty Heavy Duty PASTE CLEANER
Cleans and scours more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive qualities, it frees almost every surface from all foreign matter.

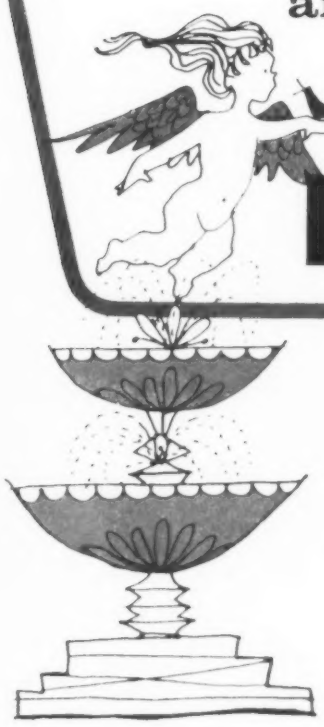
CONTAINER SILK SCREEN LABELING
Now you can have dramatic, colorful labeling of your private brand name on all 55, 35, 30, 20 & 15 *gal.* drums and 5 *gal.* pails. This added service is accomplished right in our plant...your inspection invited...or write for details.

Candy & Company, Inc
EST. 1891

Wax Specialists for over 65 years

2515 W. 35th ST., CHICAGO 32

summer 'n soap and scent



check first with Verley

The soap with "the scent of success" . . . is the soap that sells in summer! Albert Verley & Company create refreshing fragances to add instant *summer appeal* to your product.

for fragrant

SANITARY SPECIALTIES
DETERGENTS
AEROSOLS
SOAPS

For aromatic materials . . . for new ideas — check first with Albert Verley & Company.

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Soap Woody Rose SA-318 .... 3.10 lb.

Albert Verley & Company

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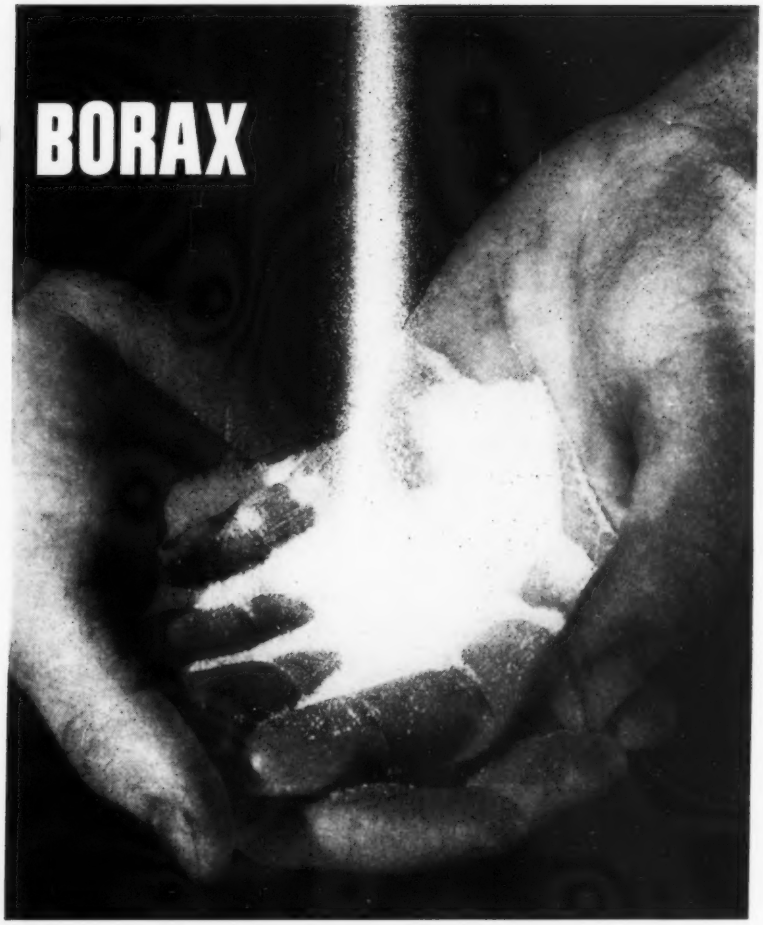
• Synthetic Aromatic Products and Organic Isolates • Bouquets and Finished Compositions
• Synthetic Flower Oils and Aromatic Bases • Essential Oils

Granular BORAX

IN SPECIAL
UNIFORM MESHES
IN A VARIETY OF
GRAIN SIZES



Borax boosts the efficiency of powdered hand soaps and cleansers.

Many makers of powdered soaps add *Borax* to improve cleansing action. Borax helps cut grease and dirt quicker—makes powdered soap work better in any water. Would you like to know more about borax? As the largest producer of borax in the world, we've done much research that may be of help to you. If you are already using borates, our recently increased production and refining facilities assure you of adequate supplies of borates in every form for every possible use. We'll meet your specifications with quality that is consistently high. May we send you samples of the borates you need?

borates ...of interest to Chemical Specialties Manufacturers...

GRANULAR BORAX... *in special screen sizes*
BORAX 5 MOL. *Pentahydrate form of Sodium Tetraborate*
SODIUM METABORATE
SODIUM PENTABORATE
POTASSIUM TETRABORATE... *Granular*
POTASSIUM PENTABORATE... *Granular and Powdered*
POLYBOR®

United States Borax & Chemical Corporation

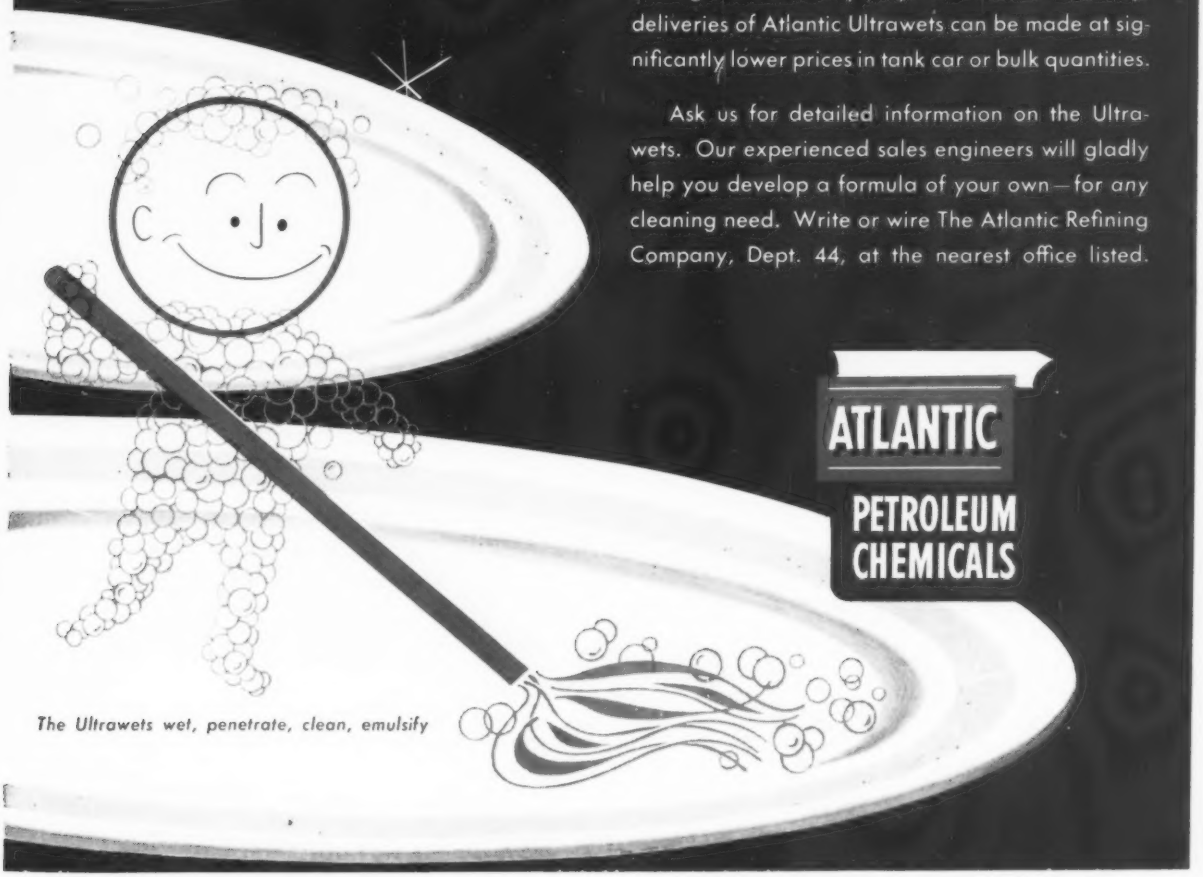
PACIFIC COAST BORAX COMPANY DIVISION
50 ROCKEFELLER PLAZA, NEW YORK 20, N.Y.

Ultrawet formulations clean quicker, sell faster

Name any number of best-selling detergents and you'll find that most of them use Atlantic Ultrawets. Formulations made with Atlantic Ultrawets do a better cleaning job because they are tailored to meet the compounders' specific needs; they *sell faster* because they do the job efficiently and easily.

The high performance characteristics of the Ultrawets afford maximum economies while maintaining formulation quality. For further economy, deliveries of Atlantic Ultrawets can be made at significantly lower prices in tank car or bulk quantities.

Ask us for detailed information on the Ultrawets. Our experienced sales engineers will gladly help you develop a formula of your own—for *any* cleaning need. Write or wire The Atlantic Refining Company, Dept. 44, at the nearest office listed.



The Ultrawets wet, penetrate, clean, emulsify

ATLANTIC
PETROLEUM CHEMICALS

Philadelphia, Providence, Charlotte, Chicago

In Canada Naugatuck Chemicals Division of Dominion Rubber Company, Ltd.

In Europe Atlantic Chemicals SAB, Antwerp, Belgium

In South America Atlantic Refining Company of Brazil, Rio de Janeiro

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For instance: Sample these scents today. Write on your letterhead and we'll send, too, the Orbis catalogue of fine products.

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Bouquet Kashmiri	Honeysuckle	Narcisse
Carnation	Jasmin	New Mown Hay
Chypre	Jockey Club	Rose
Cologne	Lavender	Sweet Pea
Divinia	Lilac	Violet
Florida		Wistaria

Always at these low Orbis prices:

25 and 50 lb. cans	$3.00 per lb.
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Trial Pounds	3.25 per lb.

Series No. 600 Orbis Odors

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Bouquet de Oriente	Divinia	Muguet
Bouquet Kashmiri	Florida	Narcisse
Bouquet Parisienne	Gardenia	Neroli
Bouquet TB	Heliotrope	New Mown Hay
Carnation	Honeysuckle	Oriental
Chypre	Jasmin	Rose
Cologne	Jockey Club	Sweet Pea
Corylopsis	Lavender	Violet
Crechene	Lilac	Wistaria
	Magnolia	

Always at these low Orbis prices:

25 lb. cans and 50 lb. cans	$6.00 per lb.
5 lb. bottles	6.15 per lb.
Trial Pounds	6.25 per lb.

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Essential Oils	Aromatic Chemicals
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Fruit Flavors	Water Soluble Gums
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601 W. 26th STREET
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THE ORIGINAL NINOL ALKYLOLAMIDES

"The Detergents That Thicken When They're Thinned"

DEVELOPED BY NINOL LABORATORIES in the mid-30's, the alkylolamide series of nonionic detergents offered for the first time a unique combination of useful features. Because of these special advantages, the NINOLS have become first choice among detergents for the formulation of many products — industrial cleaners, cosmetics, household detergents, emulsions, etc. They are improving quality and reducing costs for hundreds of manufacturers, large and small, throughout the country.

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Heavy duty alkylolamide, widely used as a base for viscous, non-rusting synthetic floor cleaners.

NINOL AA62

Lauric diethanolamine condensate used as a thickener and foam stabilizer in liquid dishwashing detergents and shampoos. An excellent detergent in its own right.

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New superamides with alkylolamide contents approaching 95%. Used in dishwashing compounds and cosmetics.

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Oil-soluble alkylolamide with high rust inhibiting action for protective oils, lubricants, etc.

Many others available for special applications.

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CHEMICAL COMPANY
427 West Randolph Street, Chicago 6, Illinois
Telephone: STate 2-4711

STEPAN CHEMICAL COMPANY
NINOL

AMERICA'S MOST COMPLETE LINE OF SURFACTANTS

FOR YOUR PREMIUM SHAMPOOS–DUPONOL® XL

a new kind of detergent that conditions as it cleans

A woman will gladly pay the price for a premium shampoo if it gives her what she really wants . . . clean, lustrous, easy-to-manage hair. The way to provide it in your shampoo is with "DUPONOL" XL. This Du Pont detergent is an all-new approach to shampoo formulation. It contains *two* hydrophilic sites—an amphoteric structure and an anionic sulfate. The result is a combination of properties unmatched in other detergents.

For example, "DUPONOL" XL has superior foaming power *without additives*. It's substantive . . . gives a soft, luxurious feel to hair and skin. It removes soil and grease without removing natural oils required for manageable hair. You won't need drying or degreasing controls with "DUPONOL" XL. It can be modified or plasticized. And it's miscible with water.

"DUPONOL" XL also offers the cosmetic elegance needed in your quality grade formulas. It's a pale golden amber that won't discolor. It has a clean, bland odor compatible with any scent you add.

Write for a test sample. We think you'll agree it produces the result consumers look for and *stay with* when they find it in a shampoo. E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Dyes and Chemicals Division, Wilmington 98, Delaware.

Duponol® **XL**
Surface Active Agent

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Better Things for Better Living . . . *through Chemistry*

After Closing

Lodes to Europe

Frederick G. Lodes, president of Lodes Aerosol Consultants, Inc., New York, who was chosen

Frederick G. Lodes

unanimously as Chemical Specialties Manufacturers Association representative to observe trade developments in Europe, will leave on his tour early next month, it was announced recently. Mr. Lodes' itinerary is as follows: Paris, France, Apr. 14-19, Hotel Meurice; Zurich, Switzerland, Apr. 20-22, Hotel Baur au Lac; and Frankfurt, Germany, Apr. 23-24, Frankfurter-Hof. Mr. Lodes also plans to visit several other major European cities to view the latest developments in the aerosol field.

An active member of CSMA's aerosol division and a member of the board of governors, Mr. Lodes has been very close to the development of the European aerosol industry and has made several trips there since 1952. According to tentative plans, he will discuss the possibility of exchanging information and ideas between CSMA and European aerosol groups with their officials and explore the practicality of formation of chemical specialties manufacturers associations with aerosol divisions, similar to the organization of CSMA in the United States. Upon his return, he will make a complete report of his findings to the board of governors at CSMA's annual mid-year meeting to be held in Cincinnati, May 19-21.

Mr. Lodes was appointed to undertake this special assignment at the association's annual winter meeting last Dec. 12 in Hollywood, Fla., by special vote of the CSMA aerosol administrative committee and the board of governors.

—★—

UBS Sets Sales Record

Sales of UBS Chemical Corp., Cambridge, Mass., reached an all-time high during 1957, according to a financial report recently issued by the company. Net sales totaled $5,194,930, compared with $3,424,047 in 1956. Net income amounted to $303,042, equal to share earnings of $1.92, compared with $107,530 and 83 cents in 1956, another company record.

—★—

West Appoints Two V.P.'s

William Flatow, Jr., and Sol S. Ross have been named vice-presidents of West Chemical Products, Inc., Long Island City, N. Y., it was announced recently. Mr. Flatow, who is general sales manager of the firm, also was elected a director. Mr. Ross is treasurer of the company, a post he has held since 1952.

William Flatow, Jr.

Mr. Flatow has served as general sales manager since January, 1956. Prior to that he served as assistant general sales manager, and before that as an advertising manager. He was elected assistant

Sol S. Ross

secretary in September, 1955. Mr. Flatow has been with West since 1937.

—★—

USDA Studies Resistance

Entomologists of the U. S. Department of Agriculture are investigating the possibility that certain types of the long-nosed cattle louse may be developing resistance to some chlorinated hydrocarbon insecticides, including lindane and DDT, it was announced last month. The study was necessitated when a spray emulsion of lindane was less effective than expected when applied recently under experimental conditions at USDA's agricultural research center, Beltsville, Md. Similar results were obtained with DDT, which is no longer recommended for use as a spray on beef cattle because residues appear in the fat of treated animals, according to USDA.

In the initial experiments, conducted by Darrell W. Anthony, USDA entomologist, in which 20 of the original calves were used, sprays containing 0.075 per cent lindane and 0.5 DDT failed to con-

trol the lice beyond seven to 14 days. Malathion, a phosphate insecticide, recently recommended for louse control on beef cattle only, gave complete control of insects for the entire 60 day trial period when applied as an 0.5 per cent spray.

USDA investigators stress, however, that further study is needed to determine whether resistance of lice to insecticides is likely to become an important agricultural problem. There is so far no indication that resistance to chlorinated hydrocarbon insecticides has become widespread among cattle lice, and approved materials are still recommended for general use.

—★—

New Velsicol Brochure

A new four-page brochure describing the role of chlordane insecticide in controlling crabgrass was published recently by Velsicol Chemical Corp., Chicago. The booklet contains information on proper formulation of the product for liquid application, plus suggested methods of use. In addition, data is provided on the use of chlordane in controlling soil insects, such as white grubs, wireworms, Japanese beetle larvae, ants, boxelder bugs, flea beetles, white fringed beetle larvae, mole crickets, grasshoppers, cutworms and sod webworms. Copies of the brochure may be obtained from Velsicol Chemical Corp., 330 East Grand Ave., Chicago 11.

—★—

Marchon Head Visits U. S.

Frank Schon, chairman of Marchon Products, Ltd. Whitehaven, Cumberland, England, and Mrs. Schon paid a three weeks' visit to the United States last month. Marchon is one of Britain's foremost manufacturers of surface active agents for the detergent and related industries and custom manufacturers of packaged household detergents, shampoos, etc. Mr. Schon contacted his firm's numerous business connections and associates in New York and in the Middlewest. Late in February the couple left for a holiday at Montigo Bay, Jamaica, B.W.I.

Mark Synthetic Detergents' 25th Birthday

THE 25th anniversary of household synthetic detergents was celebrated at a display sponsored by Procter & Gamble Co., Cincinnati, as part of an exhibit on research and progress in the chemicals and synthetics field under the American patent system in the lobby of the Department of Commerce Building, Washington, D. C., last month.

The display points to detergents as a typical example of the way in which basic and applied scientific research conducted by American industry, and stimulated by the patent system, is responsible for a continuous flow of new and improved products for the consuming public.

The first detergents, introduced to America's housewives a quarter of a century ago by P. & G., were a washing product for personal laundry and dishes ("Dreft") and a liquid shampoo ("Drene"). It was soon apparent, according to the display, that consumers liked the advantages of detergents—unlike soap, they didn't react with minerals in hard water to leave an insoluble film.

Soon, the need for an all-purpose detergent, suitable for any washing task was indicated. P. & G.'s research people worked on this problem for more than 10 years before perfecting the first all-purpose detergent, "Tide", in 1946. Later, many other companies in the industry brought out synthetic detergents, with the result that in 1957 more than 90 per cent of packaged dishwashing and laundry products used in American homes were detergents.

Pictured in the display are P. & G.'s basic research facilities at Miami Valley Laboratories, outside Cincinnati, where scientists are now at work on products for 10 to 15 years in the future. They are investigating basic scientific concepts in areas where P. & G. has interests. Also shown is applied research in the product development laboratories at Cincinnati, where other researchers translate these fundamental scientific facts into new and improved products.

Shown at the P. & G. display in the lobby of the Department of Commerce building in Washington, D. C., recently, are Sinclair Weeks, Secretary of Commerce; W. Rowell Chase, vice-president, soap products division, Procter & Gamble; Senator Alexander Wiley, (R., Wis.); Robert C. Watson, Commissioner of Patents; W. Procter Bell, manager of the patents department of Procter & Gamble.

Repellents Spray Conference Topics

AN all-day Lifestock Spray Conference, sponsored by Glenn Chemical Co., Chicago, and featuring discussions by leading authorities on cattle sprays, insecticides, and insect repellents was held at the Sheraton Hotel, Chicago, Feb. 21. A large attendance of formulators of livestock sprays from the United States and Canada was present for the conference.

Z. Z. Dworkin, sales manager of Glenn opened the conference with a talk entitled, "Why We Are Here." He outlined the problems involved in livestock insect control, particularly in the field.

Joseph Abrams, president of Glenn, followed with a discussion: "Developments and Concepts of Livestock Fly Repellents." He made the point that even though an insect repellent may not be effective against all insects exposed to it, this does not mean the repellent is not effective. He compared repellents to Salk vaccine for controlling polio.

"The Salk polio vaccine was originally claimed to be about 85 per cent effective. To the lay public, by some peculiar mental quirk, 85 per cent came to mean 100 per cent. Accordingly, when a few cases were reported of inoculated subjects contracting the disease, whispers of failure were heard in some quarters. Today we know that the vaccine was by no means a failure. We have at least educated ourselves to the fact that 85 per cent effectiveness does not mean 100 per cent . . . but that is much, much better than zero per cent effectiveness.

"The same lesson applies to insect repellency. Ninety per cent repellency is not to be construed as 100 per cent repellency. Because one fly alights on a treated surface, it must not be assumed that the repellent effect has disappeared."

The third presentation of the morning session was a "Demonstration of Repellency and Comparison of Various Formulations" by W. N. Bruce, associate entomologist, Illinois Natural History Survey, Urbana. He reported on a study in which several new fly repellents were applied to cattle to determine their relative merits in protecting cattle against stable flies. Repellents R-326 (di-n-propyl isocinchomeronate) and "Tabutrex" (di-n-butyl succinate), made by Glenn Chemical, used in base oil sprays gave better economic control of stable flies than activated pyrethrins. "Tabutrex" oil solution or emulsion formulations gave one to six days residual repellency to the stable fly, according to Dr. Bruce. He also pointed out that flies lost their ability to discriminate between treated and untreated animal surfaces after an exposure to mists containing the repellents used in the tests. After an interval of time the flies regained their sense of discrimination.

A panel discussion on livestock sprays, for which Anthony G. Grady of Sinclair Chemicals, Inc., was moderator, concluded the morning session. Other participants in the panel were Dr. Bruce, Dr. L. E. Swanson, University of Florida, Dr. L. Cutkomp of the University of Minnesota and Dr. Edward J. Campau of Standard Oil Co. of Indiana.

The afternoon session featured the following presentations: "Demonstration of Repellency" by Dr. Campau; "Announcement of Significant New Findings" by Mr. Dworkin; "Demonstration of New Findings" by Dr. Bruce. Eicoff, Mohr and Eicoff Advertising Agency discussed an educational and advertising program as the final event of the program.

—★—

Gilbert E. Webster Dies

Gilbert E. Webster, 57, president and director of National Lock Washer Co., Newark, N. J., died March 3 in Orange Memorial Hospital, East Orange, N. J. National Lock Washer is a division of American Seal-Kap Corp., New York, manufacturer of bottle caps and plastics machinery. Lock Washer makes spring lock washers and wire products.

With the company since 1939, Mr. Webster was elected president in 1950. He was active in supervising the merger of National Lock Washer and American Seal-Kap, which was effected in June, 1956. At that time he became a vice-president and director of Seal-Kap.

He is survived by his widow, Mrs. Lillian O'Brien Webster, and a sister.

—★—

Thomas Foley Dies

Thomas Foley, 66, who retired in 1956 as manager of special services for the home office operations of Monsanto Chemical Co., St. Louis, died Feb. 28 in St. Luke's Hospital, New York. He resided in Bronx, N. Y. Mr. Foley had been with Monsanto for more than 30 years and since his retirement had authored numerous technical articles for the company.

Surviving are his widow, Edith; three daughters, Martha, Wynne Theresa and Patricia Colleen Foley; and a brother and three sisters.

—★—

Brunelli in New Post

Vincent P. Brunelli has been elected president of the Lady Esther Division of Chemway Corp., Mountain View, N.J., it was announced last month by Charles T. Silloway, Chemway president. Mr. Brunelli, who is vice-president of Chemway and president of its household products division, will continue in these posts in addition to his new assignment. Mr. Brunelli served with various divisions of Johnson & Johnson, New Brunswick, N.J., before joining Chemway six months ago.

Vincent P. Brunelli

Largest N.S.S.A. Show Held in New York

THE National Sanitary Supply Association held the largest, based on the number of exhibitors, and best attended trade show and convention in its history at the Coliseum, New York, Mar. 22-25. New lines exhibited for the first time by makers of chemical specialties and equipment for dispensing or applying soaps, detergents, waxes, polishes, disinfectants and deodorants were among the highlights of the trade show at which 185 firms exhibited.

Harold J. Pond, head of Advance Floor Machine Co., Minneapolis, was elected president of the N.S.S.A. for the 1958-59 term, succeeding James Reider of George T. Johnson Co., Medford, Mass., sanitary supply jobber. Named national vice-president, the post held for the past year by Mr. Pond, was Shim D. Lehrman of A. J. Lehrman & Sons, a Harrisburg, Pa., distributing firm. Jeffrey Fried, Walton-March, Highland Park, Ill., chemical specialty firm, was chosen to be treasurer. Albert I. Mack, Easterday Supply Co., Los Angeles, was reelected secretary of the board.

New directors named at the meeting to serve for two years included: District 2, H. R. Albertson, Mione Mfg. Co., Collingdale, Pa., hand soap manufacturers; District 3, J. B. Choate, Piedmont Mop Co., Charlotte, N. C.; District 4, Edward J. Grant, S. C. Johnson & Son, Inc., Racine; District 8, George H. Taft, Crown Zellerbach Corp., San Francisco, and James Reider, retiring president.

Leo J. Kelly continues as executive vice-president and his son, Bernard, remains as executive secretary.

The association's new plan for group insurance and a current survey of the volume of business done annually by sanitary supply jobbers were explained at the meeting. Also shown for the first time was the National Sanitary Supply Association's new sound-color motion picture film, "Easy Does It." The film deals with hospital sanitation and is being made available for showings by members.

—★—

Hoonhout in New Post

Roy H. Hoonhout has joined Monroe-Danford and Co., Weehawken, N. J., as vice-president, it was announced recently. Mr. Hoonhout formerly was a sales engineer for Mack Molding Co., Wayne, N. J. For the past 19 years, he has served in various sales and technical capacities in the plastics field. Monroe - Danford represent suppliers of aerosol packaging lines and related packaging and processing items, plus manufacturers of cosmetics, pharmaceuticals and household specialties.

Roy H. Hoonhout

P. & G. Monopoly Hearing Moves to Coast

RESUMPTION of the Federal Trade Commission's hearings on its monopoly charges against Procter & Gamble Co., Cincinnati, is expected to get under way in San Francisco, Apr. 15. Following hearings there others are expected to be held in Chicago, St. Louis, Boston, New York and, according to F.T.C. spokesmen, "probably a southern city."

The Cincinnati phase of the anti-monopoly hearings, which result from P. & G.'s acquisition last summer of Clorox Chemical Co., Oakland, Calif., bleach manufacturer, concluded after three days. During this time Howard Morgens, president of Procter & Gamble, was the only witness.

There was a "remote" possibility that former P. & G. president, Neil H. McElroy, now Secretary of Defense, might be subpoenaed to testify in the hearings.

Mr. Morgens was asked by government attorneys for figures on the total amount spent by his company in 1956 for advertising and promoting all of its products. The government also sought to learn how much was spent individually on each of P. & G.'s three newest products, which the government contends are selling so well because of promotion.

Kenneth C. Royall, P. & G.'s attorney, objected strongly to opening of such records because of the harm it could do P. & G. by making valuable information available to its competitors.

Hearing Examiner Everett F. Haycraft said advertising promotion records would be kept secret. He contended that figures giving the overall picture of the company's expenditures during that year must be brought to court. He turned down the government attorney's request for records on individual products.

Officials and employees of Clorox Co. will be called by the government to testify in San Francisco about P. & G.'s purchase of the firm and its handling of Clorox advertising and promotion.

The government expects to rest its case in June.

Whether or not Neil McElroy will be called as a defense witness will "depend upon how the case evolves," attorneys for P. & G. said. Government attorneys indicated Mr. McElroy's appearance was a "remote possibility" since it was Mr. Morgens who handled the Clorox purchase, although Mr. McElroy was president of P. & G. until the first week of last August. P. & G. purchased Clorox August 1.

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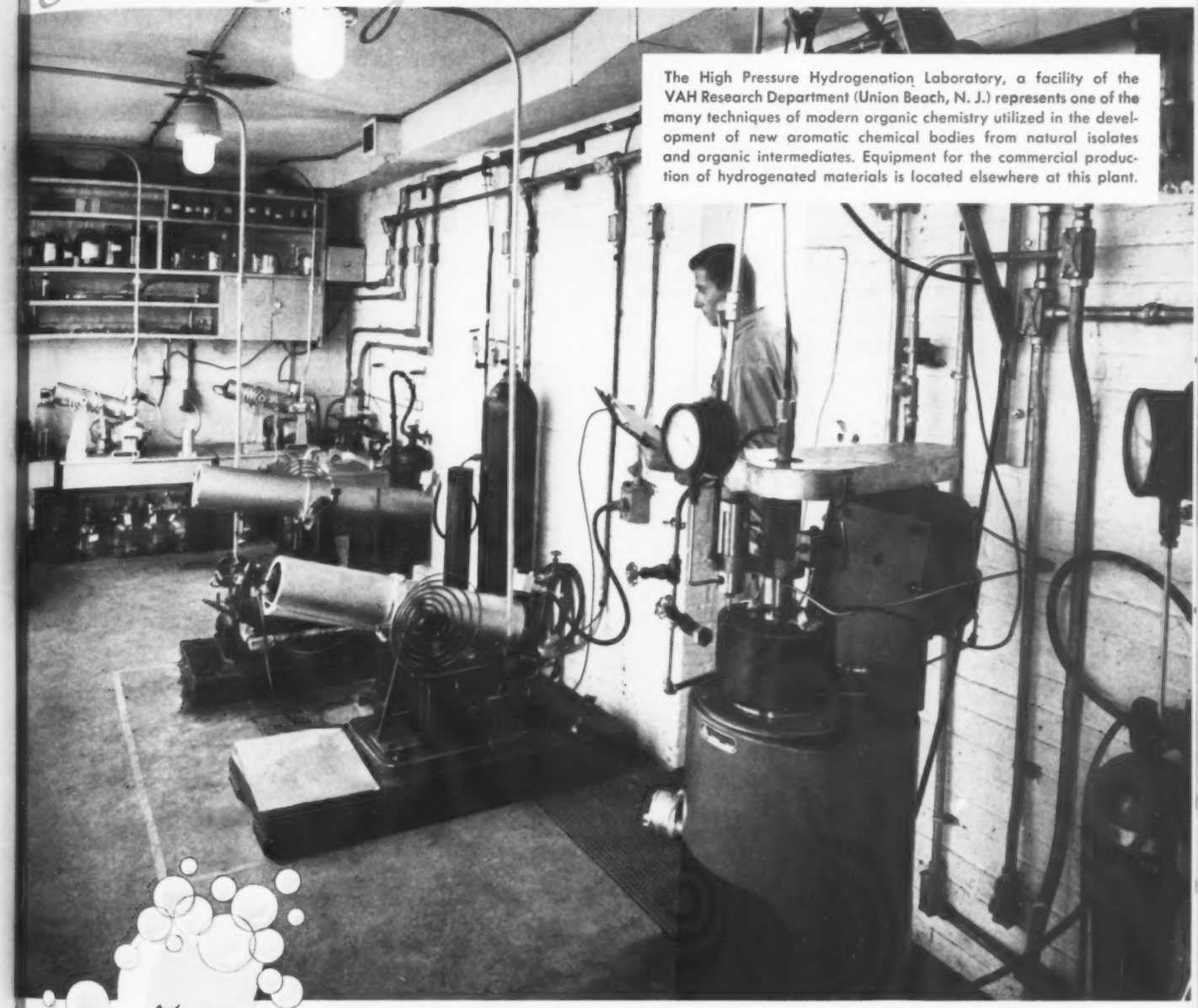

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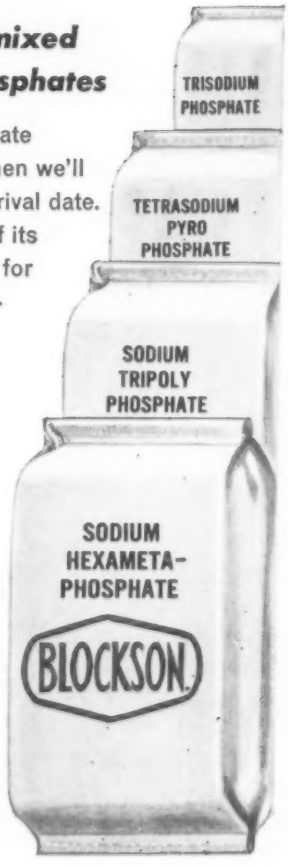

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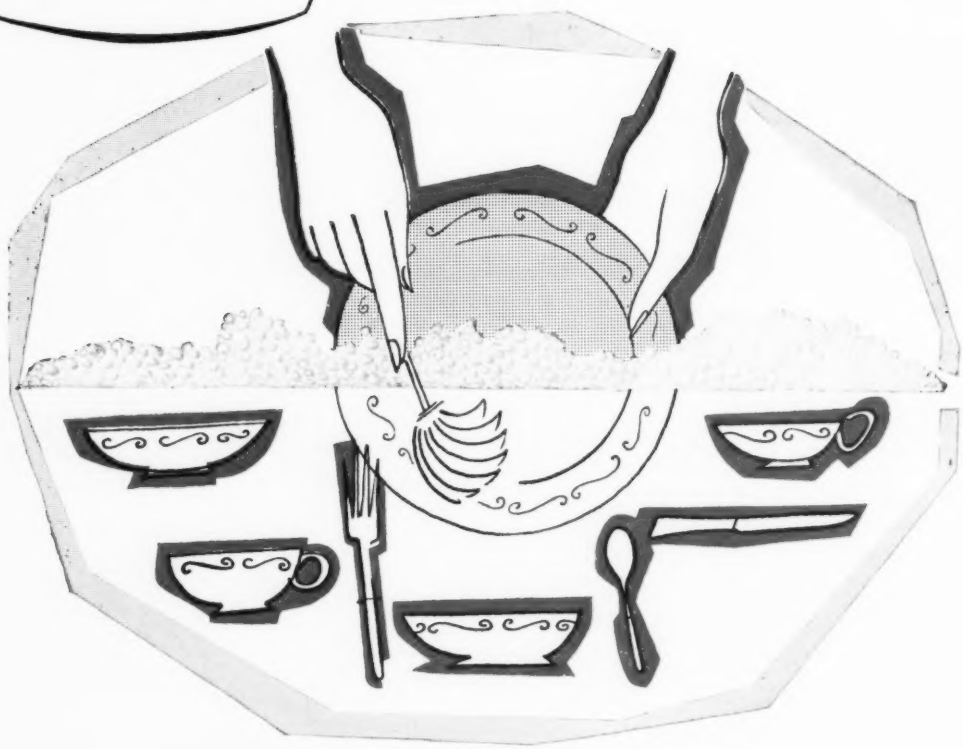

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DIVISION OF STAUFFER CHEMICAL COMPANY
1956 WEBSTER, OAKLAND 12, CALIF. • PLANT, WESTEND, CALIF.

SODA ASH
SODIUM SULFATE
BORAX • HYDRATED LIME

PACING PROGRESS WITH CREATIVE CHEMISTRY

Ross Hastie, Vice President, Hilton-Davis Chemical Company, Cincinnati, Ohio, discusses the Pluronic Grid with T. A. Langstroth, Director of Research and Development for Pigments and Flushed Colors.

"Wyandotte's Pluronic Grid approach is a real aid to research"

"In management, in purchasing, in development, we recognize that research time is priceless," says Ross Hastie, Hilton-Davis Chemical Company, Cincinnati, Ohio, a leading maker of intermediates, dyes, and flushed pigments for the ink, paint, and textile industries.

"To us, the Wyandotte Grid approach for evaluating the Pluronic series is a definite advance in research techniques, and a very timely one. It eliminates random evaluation of unrelated chemicals . . . suggests in advance the properties a given Pluronic grade will contribute.

"It should conserve valuable research and development time for chemists in any industry . . . enable them to learn more about their own products, and stimulate new-product thinking.

"We look forward to putting the Grid to continued good use . . . and believe each experience with it will add to our bank of product information for future needs."

The "Grid approach" is based upon the Wyandotte Pluronic* series . . . a group of related block-polymers with excellent nonionic surface-active properties, and 100% active in all forms (liquids, pastes, flakes, powders, and cast solids).

Have you received our new Pluronic Grid yet?

If not, write us for your copy. If you give us background information on the characteristics you are looking for, or the application you are currently interested in, we'll enclose data sheets and other technical information with your Grid. Samples of all Pluronic grades are available on request. *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.*

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Wyandotte

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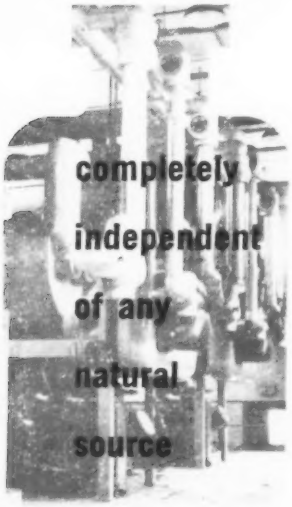
the new 'ROCHE' Aromatics offer the perfume designer and manufacturer :



- *previously unattainable stability in quality, supply, and price*
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- *unexplored possibilities for creation of new interesting fragrances*
- *opportunity for long-range planning and purchasing*

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LINALOOL 'Roche'

A purer material than any previously offered to the industry. Free from the impurities present in the linalool from natural sources. Contains no other alcohols or terpenes. Olfactorily pure and floral in character. No residual 'after odor.' Unusually stable in soap.

LINALYL ACETATE 'Roche'

A very pure linalyl acetate containing no other esters and no terpenes. The Roche special process also precludes the formation of any other alcohols during the esterification process. Olfactorily pure and clean in odor. No residual 'after odor.' Unusually stable in soap.

GERANYL ACETONE 'Roche'

A completely new synthetic aromatic. Possesses a soft green odor with a rose note. A good base for synthetic lavender, geranium and rose bouquet. Stable in soap.

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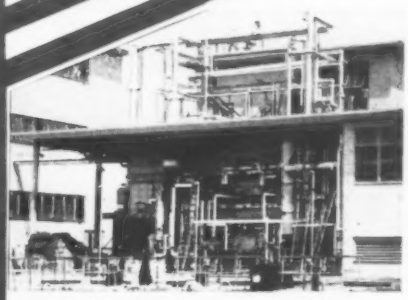
Pure nerolidol. Light balsamic odor. Excellent fixative. Blends well with any perfume compound.

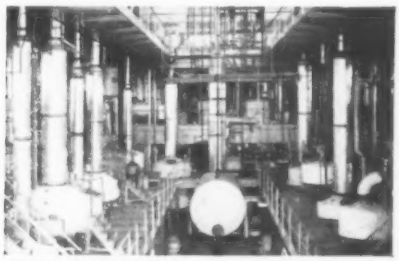
Detailed information on each product will be furnished on request.

Continuous olfactory control.

Constant control of uniformity.



Part of the specialized manufacturing facilities for maintaining uniformity of 'Roche' Aromatics.



Uniformity assured by controlled production.

'Roche' Aromatics are available through principal essential oil distributors

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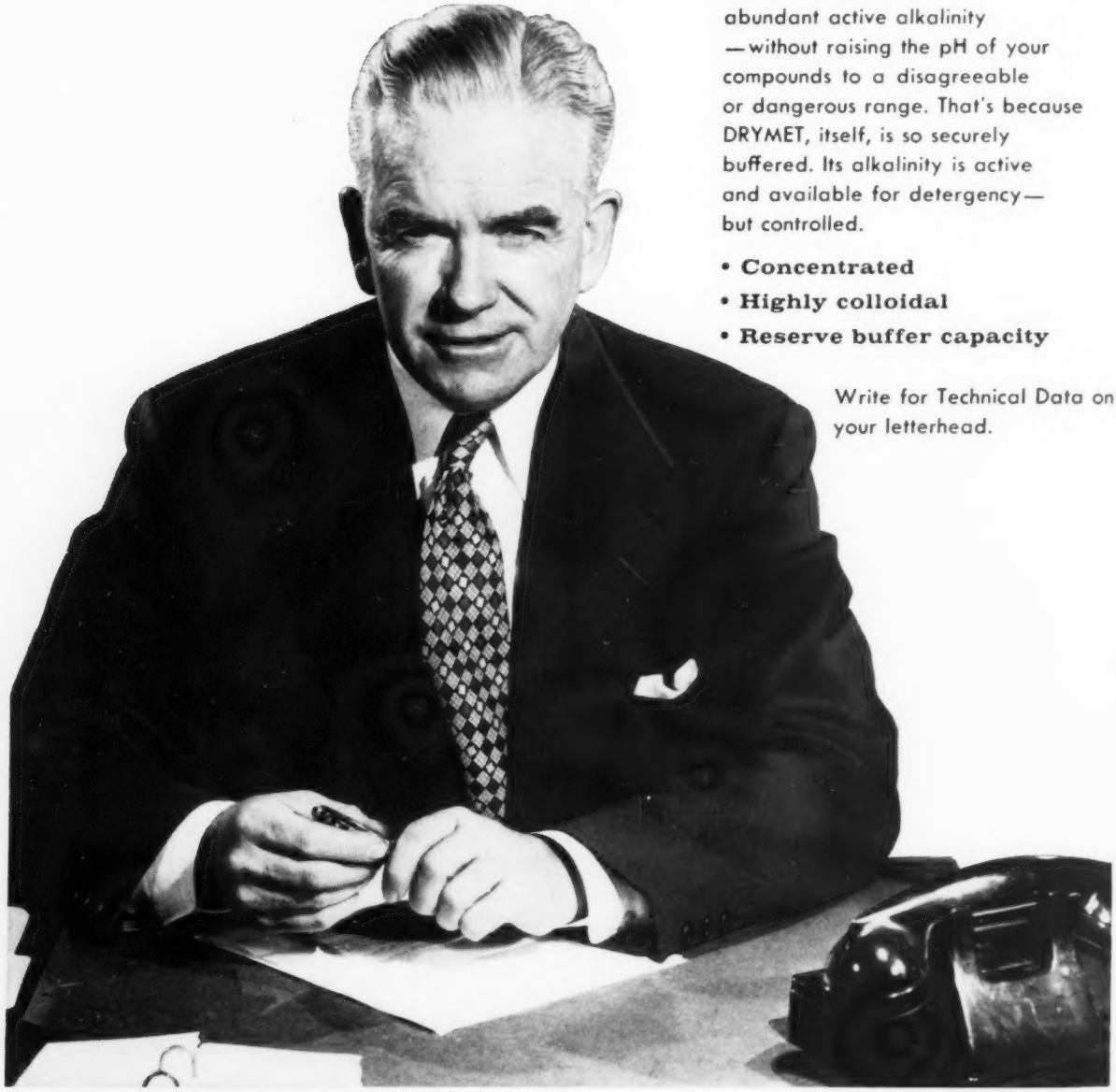
"I've been using DRYMET* for 25 years to reinforce detergent formulations."

Anhydrous Sodium Metasilicate



DRYMET* provides power—abundant active alkalinity—without raising the pH of your compounds to a disagreeable or dangerous range. That's because DRYMET, itself, is so securely buffered. Its alkalinity is active and available for detergency—but controlled.

- **Concentrated**
- **Highly colloidal**
- **Reserve buffer capacity**

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Cowles CHEMICAL COMPANY

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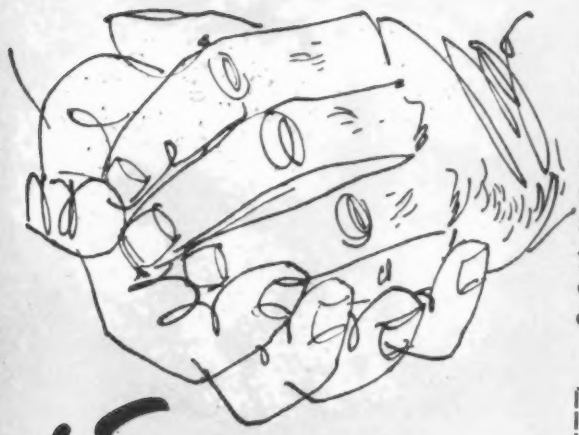
you, too, can profit from stability in OLEIC ACID

here's how Emersol® 233 LL Elaine increases shelf-life of a surgical soap

Case History No. 83-02: "A large manufacturer of surgical and germicidal soaps continually had problems of storage stability of a high grade surgical soap. The development of rancidity and changes in color were particularly disturbing to users of the soap especially where cleanliness and sterilization are imperative. Upon investigating Emersol 233 LL Elaine, this manufacturer found it so superior to the double distilled oleic acid he had been using, that it eliminated all problems of instability and odor development. Emersol 233 was also tried in other germicidal soaps in this manufacturer's line and the improvement in stability was again outstanding."

This is but one example of how outstanding stability improved a group of products. In any product, the replacement of ordinary oleic acids by a comparable Emersol grade prevents the development of rancid odors and avoids discoloration, breakdown of emulsions, changes in texture, and any deterioration of performance. So, why risk your products' good reputation when you can guard against failures so easily—by always buying the Emersol brand when you need oleic acids.



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FOR YOUR

Every Soap or Detergent Need!

Kyro EO A neutral nonionic synthetic detergent of the 100% alkyl-phenol ethylene oxide condensate type. A light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties offer excellent performance in liquid detergents, sanitizer detergents, self emulsifying solvents, laundry detergents, glass, textile, and dairy cleaners, insecticides, and bottle washing compounds.

AMBER GRANULES. AMBER GRANULES. A neutral 88%, 42° titer-type soap of exceptional purity and uniformity. Well suited for the preparation of paste or gel-like products because of its high titer. Its granular form makes it ideal for powdered products. Excellent for the preparation of hand cleaners, paste cleaners, polishes, lubricants and coatings.

ORVUS ES PASTE. A specially developed synthetic detergent whose active ingredient is mainly modified alkyl sulphate. Offers exceptional efficiency and stability over a wide range of operating conditions. Wetting, penetrating, sudsing, dispersing and emulsifying properties make it excellent for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners.

ORVUS AB GRANULES. A neutral synthetic detergent, wetting and emulsifying agent of the 40% active sodium alkyl aryl sulphonate type. A white product that can be used effectively in the blending of bubble baths, car washes, dishwashing compounds, dairy cleaners, insecticides, laundry detergents, rug and upholstery cleaners.

ORVUS WA PASTE. A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium alkyl sulphate. Excellent sudsing, wetting, emulsifying, dispersing and penetrating properties Ideal for paste and liquid shampoos, bubble baths, liquid detergents, liquid car washes, liquid floor cleaners, insecticides, glass cleaners, rug and upholstery cleaners.

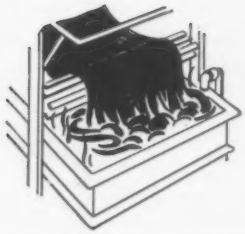
IVORY BEADS. IVORY Beads A medium titer, neutral white soap of exceptional purity and quality. Well suited for compounding products where a mild but effective soap is required—hand soaps, polishes, protective creams, dishwashing compounds and paper coatings.

ORVUS K LIQUID. A modified, highly concentrated ammonium lauryl sulphate —modified for increased sudsing and mildness. Exceptionally low cloud and pour points. Highly fluid and easy to handle. Ideal for clear liquid shampoos and liquid detergents where high foaming is required.

Procter & Gamble's Products Research Department will gladly supply you with information on how you can save time and money when you formulate with Procter & Gamble products. You can also get technical help in connection with their use by writing to:

Procter & Gamble BULK SOAP SALES DEPARTMENT, P. O. BOX 599, CINCINNATI 1, OHIO

Soaps
Synthetic Detergents
Alkaline Cleaners



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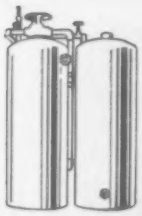

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Whatever your use...

for PHOSPHATES
call General Chemical

General Chemical has over 50 years of experience in the manufacture of phosphates. In that time, many developments which have made phosphates easier and more practical to use, have been pioneered by General Chemical research. This background of experience makes General Chemical your *best* source of supply for phosphates. The phosphates listed here are available in a variety of forms, suited to every need—all offering high quality and excellent uniformity. Call your nearest General Chemical sales office for specific information.

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Potassium Phosphate
Mono & Dibasic, Purified

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Wet process, 65%
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"something old"...

WESTVACO® PHOSPHATES

INTEGRATED PRODUCTION NATIONWIDE!

East coast, at *Carteret, New Jersey*. West coast, at *Newark, California*. Or right in the center of the U. S. at *Lawrence, Kansas*.

Westvaco *makes* the phosphates you need *where you need them*. We're set to give you prompt service now . . . and assure dependable, continuing supply into the future.

We're the oldest fully integrated producer, too, with more than fifty years' experience in meeting the changing requirements of the soap and detergent industry.

Your nearest Westvaco office will gladly quote on the products listed.

POTASSIUM PHOSPHATES

Dipotassium Phosphate
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Hexaphos®, Fosfodril® and Sodaphos®
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Sodium Acid Pyrophosphate
Sodium Tripolyphosphate
Tetrasodium Pyrophosphate
Trisodium Phosphate Anhydrous
Trisodium Phosphate Hemihydrate
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WESTVACO CDB®

DRY CHLORINE COMPOUNDS

Here is a new source of active chlorine in *powder form* for bleaches, cleaners, germicides, sanitizers and water treatment.

Westvaco CDB's are available in a range of three chlorine contents. They're soluble, stable and compatible with a broad variety of salts, anionic detergents and other compounds.

Technical data based on three years' research and suggested starting formulations on request.

CDB 60
Sodium Dichloroisocyanurate
(60% Available Chlorine)

CDB 70
Dichloroisocyanuric Acid
(70% Available Chlorine)

CDB 85
Trichloroisocyanuric Acid
(85%-plus Available Chlorine)

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Putting Ideas to Work

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Westvaco Mineral Products Division
General Sales Offices:
161 E. 42nd STREET, NEW YORK 17

. . . in brief

as the editor sees it . . .

GLYCEROL . . . Use of glycerine in 1957 is estimated at 248 million pounds by the Glycerine Producers Association. This represents a continuation of the steady long-range uptrend in consumption, an increase of approximately 10 per cent during the past five years. Of this total consumption, about 238 million pounds were supplied by domestic production, the balance being imported material, chiefly crude. Imports of crude totaled about 25 million pounds. Approximately 100 million pounds of the glycerine used in 1957 were synthetic. The balance of consumption was so-called natural glycerine from soaps and fatty acids.

Most uses for glycerine,—resins, cellophane, cigarettes, cosmetics, foods, and the like,—show an uptrend. Dynamite seems to be the one exception. But the greatest potential for future growth could lie in chemical derivatives of glycerine as yet unproduced. It is here that a sudden increase in demand might arise which could make current production wholly inadequate. For forty years, we have observed the advent of glycerine substitutes, but withal, in a world of growing chemical complexities, glycerine has maintained its market position, its use steadily expanding. Maybe new glycerine plants now only on drawing boards, may be needed sooner than we expect.

* * * * *

PROPELLANTS . . . About two years ago, we had it right out of the horse's mouth that FDA was about ready to clear some fluorinated hydrocarbons for use in certain drug and food aerosols. But it never happened. Naturally, being fluorine compounds, these propellants were viewed with unusual caution by FDA. Or at least, we suspect that may be the chief reason for their failure to give such compounds the green light. When and if present fluorinated compounds may be cleared for use in such products now seems a bit uncertain. A new fluorine product, may be; the old ones, unlikely.

Wider use of competitive propellants has coincided with the advent of aerosol tooth paste, some drug items and a couple of foods. The number of such products in the laboratory is legion, those on the market still few. But these newer propellants have drawbacks not inherent in the fluorinated hydrocarbons. The latter seem easier to handle, to package and to hold in a package, to work better. With this in mind, we wonder if and when FDA might get around to clear some of them. Unless we are misinformed, toxicological tests to date have given most of them a clean bill of health.

* * * * *

OUTLOOK . . About everybody and his brother have been dipping their oars into this business outlook thing during the past few months. We figure that we might as well put in with our opinion and also add to the confusion. Recently Dun & Bradstreet made one of their periodic surveys on the status of business and how things look just ahead. They found less optimism in the expressions of opinion from businessmen. It seems that reduced production, cuts in capital spending and higher unemployment have dampened their ardor.

Now, here's where we chip in with our two cents worth. We too have talked to a lot of people, mostly people in detergents, soaps, household chemical specialties. And we find no single opinion. In fact, views of the future vary all over the map, more optimistic than otherwise. Now when it comes to consumer durable goods, requiring chiefly a sizable investment, there may be considerable cause for pessimism. Such products always are affected sooner and to a greater extent than stuff like soaps, detergents, floor wax, furniture polish and other non-durable products.

A drop in employment of three or four per cent might very seriously retard sales of durable consumer goods. The same drop could well be

Increasingly the product of choice...

SINDAR'S G-11® (HEXACHLOROPHENE U.S.P.)

Here are the facts which have convinced so many leading manufacturers of soaps and cosmetics that G-11 is the most effective germicide and deodorant available.

Deodorant Action: Scientific studies have proved that G-11 remains on the skin even after washing. It therefore provides *continuous* control – between washings – of bacteria that cause perspiration odor.

Proof of Skin Degerming: 40 independent investigators agree that G-11 reduces the bacterial population of the skin by 95% or more. 150 scientific publications attest to its effectiveness. Over 95% of America's hospitals use it for surgical scrub and other purposes.

Consumer Acceptance: More consumers buy G-11 – Hexachlorophene – soaps than any other deodorant bar. Hexachlorophene is known to millions of people.

Soap Compatibility and Stability: G-11 is effective in *all* types – bar, powder, and liquid soaps and detergents. It is also non-corrosive, alkali stable, effective at all pH's.

Non-Irritation of the Skin: Established by its use in billions of cakes of soap and millions of units of cosmetic and pharmaceutical products such as lotions, oils, powders and ointments for babies as well as adults.

Quality: All production meets U.S.P. specifications.

Availability: Immediate shipment of truck or carload quantities from stock. Available around the world.

Technical Service: Sindar discovered hexachlorophene, holds the patents, pioneered its use in antiseptic and deodorant soaps, and is ready to assist you with your technical problems and to supply data on its varied applications.

SINDAR® Corporation
Industrial Aromatics and Chemicals

330 West 42nd Street, New York 36, New York

ignored by the market for non-durable products. We feel that therein lies the difference, a difference which could make a toilet soap or floor wax maker more optimistic with good reason than the producer of automobiles or refrigerators.

* * * * *

FAIR TRADE . . . When General Electric last month announced that dealers could sell its numerous electric appliances at any prices they saw fit, it dealt a body blow to fair trade in all ramifications. The effects of this decision are bound to be farreaching for the abandonment of fair trade pricing by GE well could undermine the confidence of many others who have been carrying on the fight for years.

In our humble opinion, fair trade pricing in its present form has stood mostly on weak ground since its inception. The basic cause of this, we feel, could come from the wide retail mark-up in many products. There is just too much of a spread, a spread which has always made the price cutter's mouth water. To this must be added a lack of uniformity of policies among manufacturers, some supporting fair trade, others not.

That the decision of GE might well bring drastic action among both the proponents and the enemies of fair trade seems likely. Probably a complete federal fair trade law may be the only solution of the problem, if there is a solution.

* * * * * *

SOAP SALES . . . Soap and detergent sales for 1957 moved ahead 3.3 per cent in tonnage over 1956 which in turn had been another record year, according to the figures of the Association of American Soap and Glycerine Producers. More than four billion pounds of detergents and soaps were sold in 1957. Of this total 71 per cent was synthetic detergents, a jump of 8.4 per cent over the figure for 1956. Soap sales showed a continuation of their long-range downtrend, declining 7.5 per cent from the level of 1956. The greatest growth in sales came in liquid detergents which gained 40 per cent over 1956.

Dollarwise, all soaps and detergents showed a gain of 9.3 per cent in 1957 over 1956. The reported total approximated a billion dollars. Synthetic detergent sales in dollars moved up 14.4 per cent in 1957. Totals for soap sales were down only a half per cent even though tonnage dropped 7.5 per cent.

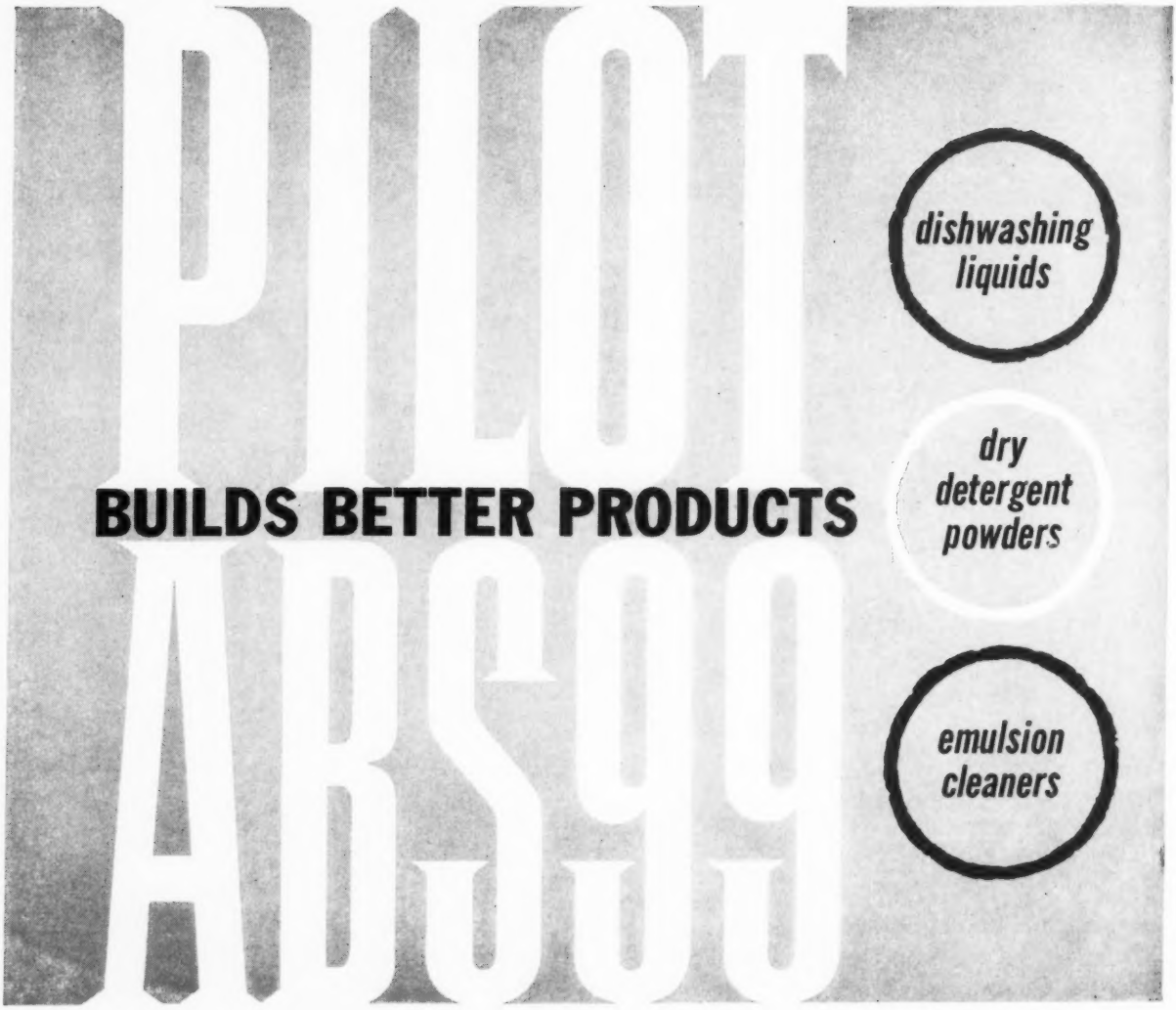
Significant in the survey is a figure of 28.5 pounds per capita for soap and detergent consumption by the American public and industry. This represents a new high in soap use. After several years of steadily rising soap consumption, it would not be surprising under present conditions if tonnage, value and per capita use of all soaps and detergents flattened out or declined slightly during 1958.

* * * * *

NEW PRODUCTS . . . New things are imperative in today's competitive melee, they tell us. Half of the successful retail products on the market today were not even thought of ten years ago. The consumer demands newness and a manufacturer's survival may depend on meeting this demand. Old things are constantly being pushed out of the picture by new products, some times better than the old, some times not. And nowhere has this been more noticeable than in detergents, household chemical specialties and foods.

But in the rush to get new things to market, a lot of manufacturers have been burned and more are going to be burned. Too many new products flop. As recently pointed out by the head of a leading food chain, a large percentage of new items fail to last a single year. This staggering mortality rate, says he, dictates that manufacturers exercise greater caution. Caution? In our book, about half of the marketers of new products have long since thrown caution to the winds. They scramble to get a new item to market principally and primarily because their competitors have done so. Caution? Who has time for such old-fashioned nonsense? Speed, boy, speed! Market research, shelf testing? Phooey on such baloney. Let's get going!

The next two years, we have a hunch, will see the greatest mortality in new products observed in many a day. Many junky and unneeded items will go by the board. Yes, new things equally unneeded will arise to replace them only in turn also to fail. It's bound to happen. Nothing less could come out of the present half-baked marketing scramble in which we find ourselves.



PILOT ABS-99 builds better end products because ABS-99 *is* a better product to start with. ABS-99 *is* the highest dodecyl benzene sulfonic concentrate commercially available: 98% concentrated with extra activity—14% more active ingredient than ordinary 88% pure sulfonics.

ABS-99 is purer. *So pure, in fact, that it may be kept in plain steel containers!*

Pilot ABS-99 offers greater compatibility with oils and other organic substances; it prevents precipitation because of its low sulfate content, lowest of any similar material on the market.

The uniqueness of this new standard of purity is a result of Pilot's *cold processing:* built in are high detergency and foaming character—stabilized are its light color, viscosity and low odor. You'll save, additionally, on perfuming.

Pilot ABS-99 adds greater flexibility to your detergent formulations, for it is the basic building block for all sulfonic detergent products. So, for superior products—start with the best. Write for technical literature and samples right now.

LEADS THE WAY TO BETTER PRODUCTS
PILOT

PILOT *California Co.*

215 WEST 7th STREET • LOS ANGELES 14, CALIFORNIA

as the reader sees it . . .

Washroom Odor Problem

Editor:

In regard to your editorial on "Perfume" in the January issue of *Soap & Chemical Specialties*, Page 29, I'm glad to see that you spend some of your time in washrooms – and at cocktail parties.

Your problem in a washroom may be a minor one, but where do you dry your hands? Or are you one of those characters who leave wet, looking for a good handshake?

The next time try one of those paper towels. Sure, they dry – but the odor remains behind. Maybe that's why I don't dry mine, anymore.

Yours for better washrooms.

L. W.
New York

We're sure the writer of this letter prefers to remain anonymous. However, he has a point. In the editorial referred to we mentioned a nice cocktail party we attended which was more or less spoiled for us by the terrible odor of the ink used to print the paper napkins and a cheap unperfumed liquid soap in the washroom. Our point was, and is, that while great advances have been made in the perfuming of many products, there is still room for improvement. Ed.

—★—

Surfactants Listing

Editor:

I find on page 44 of the December issue of *Soap & Chemical Specialties*, Part 2 of Surfactants Listed. Unfortunately, I must have missed Part I, and as I would like to have this complete in my file I wonder if you would be kind enough to provide me with the issue containing Part I.

C. W. Buhler,
Executive vice-president
A. S. Harrison Co.
South Norwalk, Conn.

Reader Buhler must have been looking at page 44 of the January issue of Soap & Chemical Specialties, *in which the second part of the listing of surfactants was published. The first installment began in December. Part II appears in this issue and the listing will conclude with the April issue. For Mr. Buhler's information, and others, the entire list will be reprinted in booklet form, as it has in the past, and will be available from Mr. McCutcheon, 475 Fifth Ave., New York 17, N. Y. The price of the reprints has not been set as yet. Ed.*

—★—

. . . Disruptive Propaganda

Editor:

Maybe you remember the speech I made out in California last June where I said, among other things, "scarcely a week goes by that the Chicago news bureau of the A.M.A. (American Medical Association) in its clip sheet", (and the word "clip" is a marvelous designation for it) . . ."

The misleading and disruptive propaganda put out by this organization goes far beyond anything that a commercial organization would dare to do, and you can quote me!

S. L. Mayham,
Executive vice-president,
Toilet Goods Association,
New York

When Bernard E. Conley, chairman of the American Medical Association's committee on toxicology addressed a meeting of the New York State Bar Association in New York, Jan. 29 an A.M.A. press release stated that the chemical industry strongly supported the committee's work. Upon close reading of a copy of the talk handed to us by Mr. Conley we could find no such statement. Mr. Conley would not dare make such a remark, be-

(*Turn to Page* 211)

Charles R. Lichtenberg, head of Chicago Sanitary Products Co., and frau, Sue, pose for pictures aboard the S. S. Mauretania, Feb. 11, in New York, just before taking off on their annual vacation. This year it's an 18-day West Indies Cruise. We'd list their itinerary, but what's the use of making you working people unhappy.

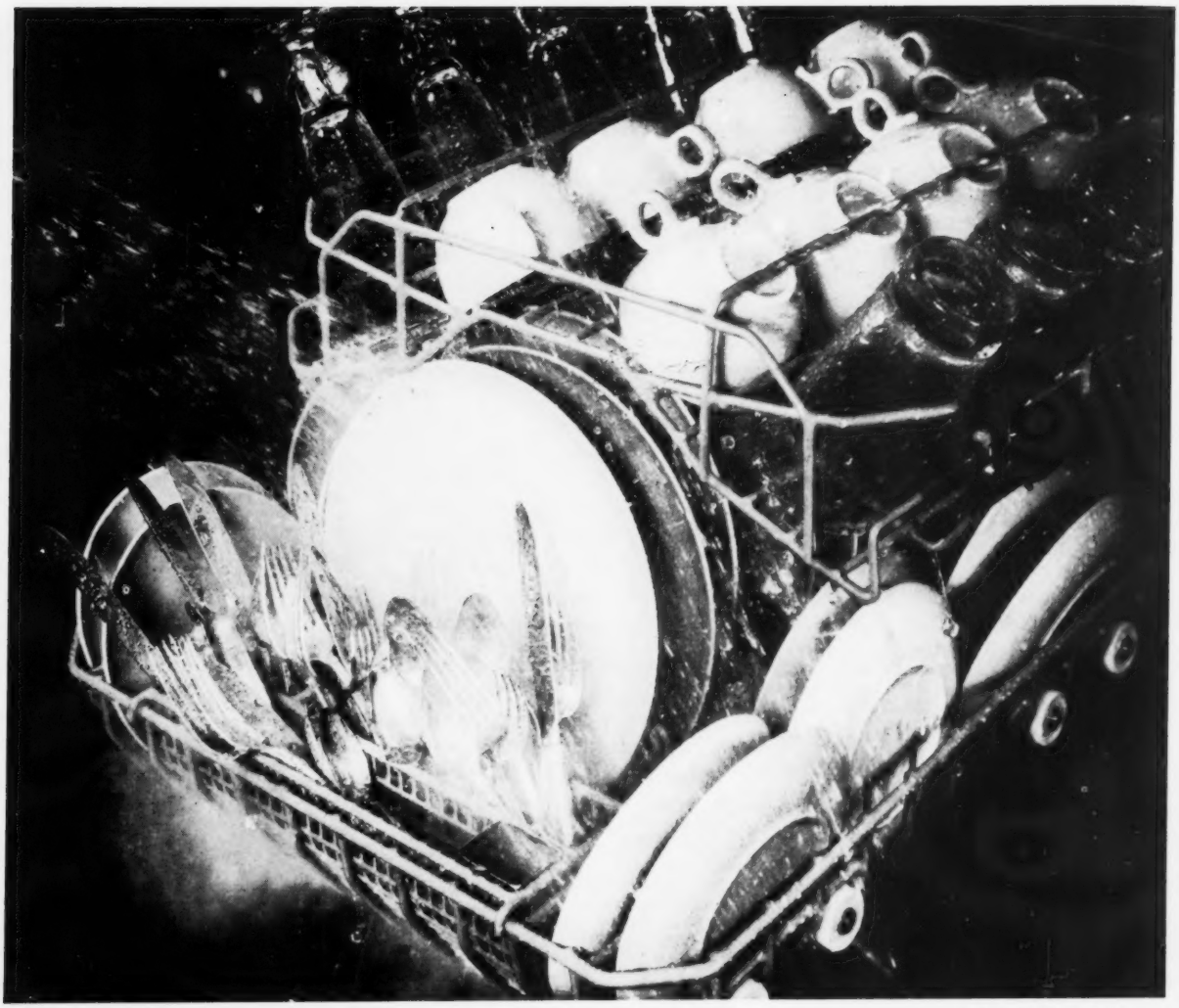


Photo The Anaconda Company

In your Dishwashing Compounds, liquid or dry . . .

PQ SILICATE ADDS THESE SALES ADVANTAGES

- protects silverware (reduces stain).
- preserves china and enamel glazes and decorations; glass sparkles.
- inhibits corrosion of copper, brass, zinc, aluminum caused by detergent materials i.e., alkyl aryl sulfonate, tripolyphosphate or pyrophosphate.
- removes oily or greasy soil quickly; rinses thoroughly.

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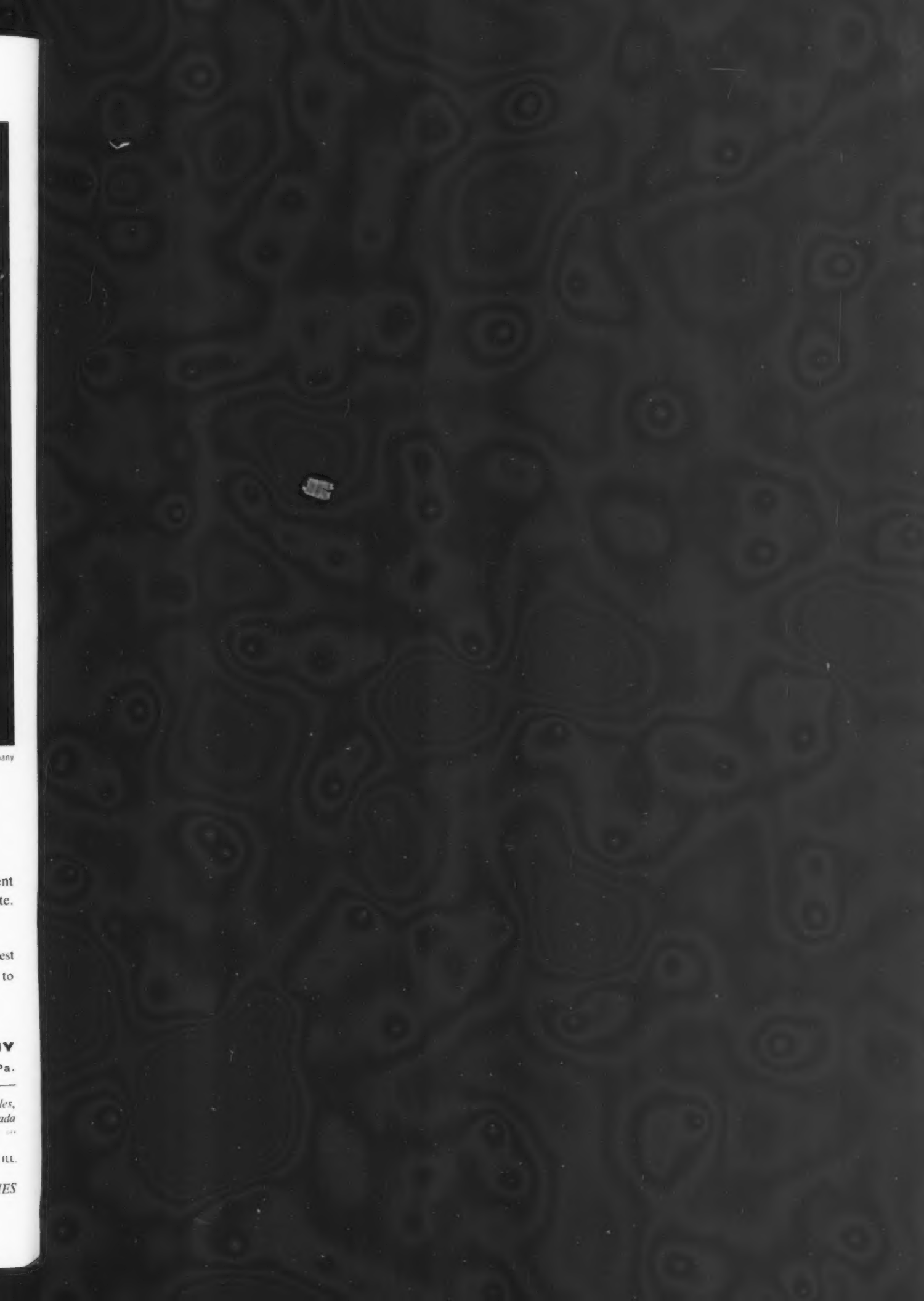
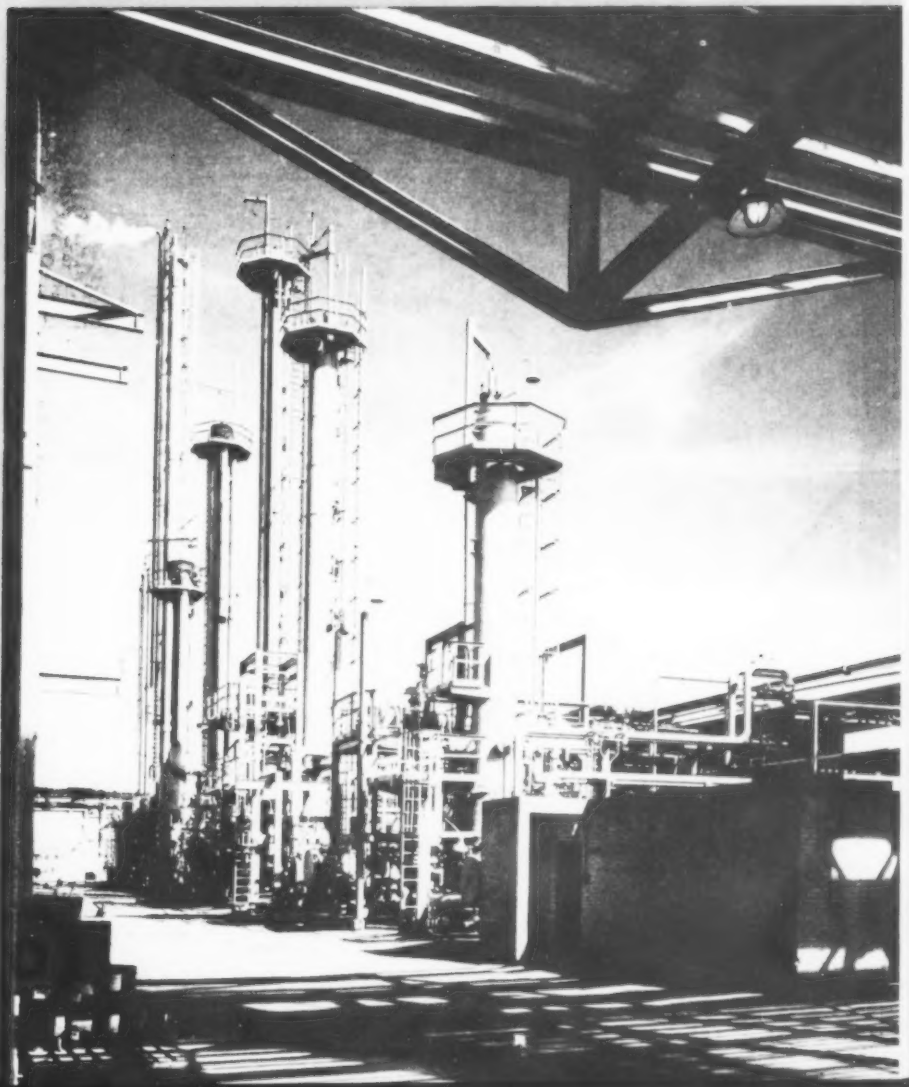


Detergents . . . Cleansers . . . Soaps . . .

Facilities for producing a major intermediate in the manufacture of synthetic glycerine at the plant of Shell Chemical Corp. in Houston, Tex. The glycerine outlook and role of synthetics discussed on page 47.



- Aerosols
- Detergents
- Dishwashing compounds
- Floor scrubs
- Glycerine
- Hand cleaners
- Laundry soaps
- Liquid soaps
- Metal cleaners
- Potash soaps
- Scouring cleansers
- Shampoos
- Shave products
- Soap powders
- Starch
- Steam cleaners
- Medicinal soaps
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The Glycerine Outlook

By E. Scott Pattison*
Manager
Glycerine Producers Assn.

LAST year, I reported at this meeting that glycerine in the United States was acquiring more and more the status of a chemical product, as opposed to that of a processed commodity. This trend has been extended through 1957. Another year has been added to glycerine's record of ready availability, on a basis the buyer can count on, month after month. It is some time now since I have heard those old objections to formulating with glycerine – fear of radical shifts in the supply situation, or the need to try to outguess the market.

Whether or not this is a responsible factor, we find that 1957 was a record year for glycerine consumption. With the December figure conservatively estimated, domestic use of glycerine, including glycerine made from domestic fats, from propylene and from imported crude, topped 248 million pounds, as calculated from Commerce Department figures. This is about 12 million pounds higher than 1956, and about 8 million pounds higher than the previous record year, 1950. Actually, the 1950 peak is somewhat open to question, as the Korean threat at the time probably led to an overstatement of consumption, due to the build-up of unreported stocks by consumers. There is no evidence that the customer's mood of December 1957 was to build up secret stocks – to put it mildly!

Monthly disappearance in 1956 and 1957 is shown in Figure 1. I have been wondering what significance we should attach to the fact that, relatively, we have done better since mid-year than in some of the earlier months. There is some evidence of a bulge in purchase for alkyds in the early fall. It reopens the old question as to whether glycerine movement leads or lags behind the business cycle. Overall, as compared with 1956, we had about a five per cent rise in 1957. Our long-term growth rate in consumption, as calculated on the five-year moving average, was maintained at about two per cent. This is not as spectacular as the growth rates on many chemical products featured in the press these last few years, but it has not slipped off the way some of them have, either. To those for whom this disappearance calculation is somewhat of a mystery, a word of explanation: Government figures on consumption of refined glycerine, as obtained by monthly questionnaires sent to known users, have been regarded as inadequate in the trade. We have felt that one arrived at a more accurate consumption figure by difference, calculated from the changes in stocks, in production and net foreign trade. The complicating factor is that product movement takes place and stocks exist both as crude and refined glycerine. A calculation entirely in terms of re-

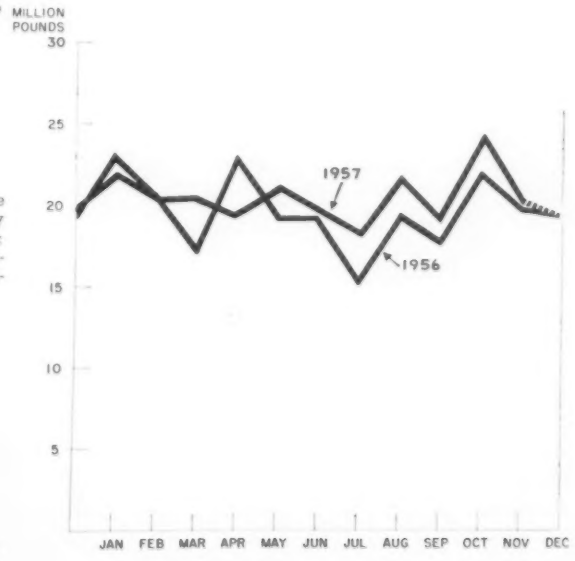


Figure 1. Glycerine disappearance by months 1956-57; Source: U. S. Department of Commerce.

*Paper presented during annual meeting of Association of American Soap & Glycerine Producers, New York, Jan. 23, 1958.

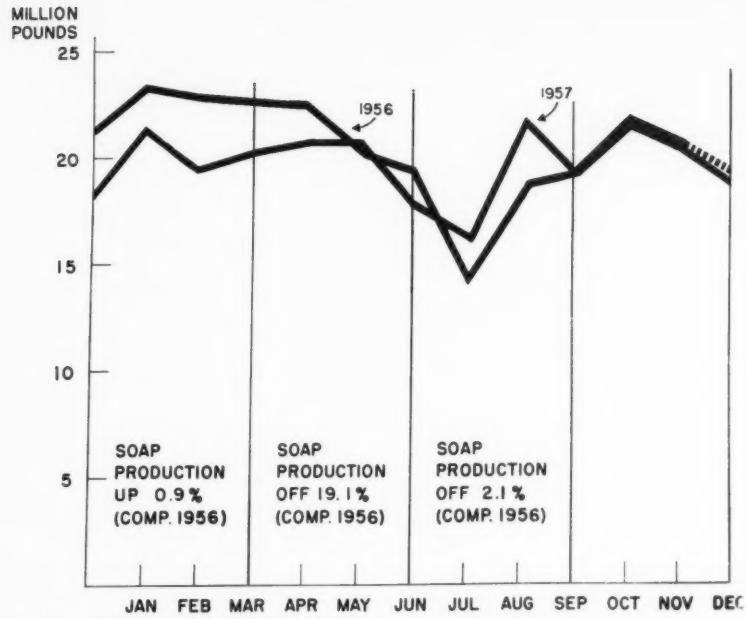


Figure 2. Crude glycerine production (100 per cent basis) including synthetic by months 1956-57; Source: Based on U. S. Department of Commerce data.

fined glycerine would ignore the user who might be buying crude for use as such, or doing his own refining of purchased crude without reporting his operations.

Disappearance is computed monthly by adding total end-of-month stocks, crude production and imports, and subtracting first-of-month stocks and exports, all brought to a 100 per cent basis. Glycerine from propylene is included as crude production, even though it is never marketed as such. Because of a lag by government reporting agencies, imports and exports are generally not available until six weeks or so after the end of the period.

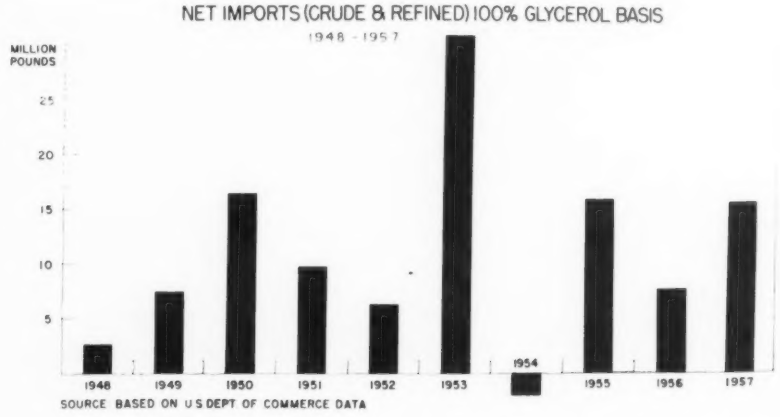
The relationship of glycerine disappearance, so calculated, to production, highlights a significant change between 1956 and 1957. In 1956, we had produced within the United States some 7.5 million pounds more glycerine than we consumed. In 1957, we appear to have consumed some 10 million pounds more than we produced domestically. Thus, our record domestic consumption was achieved while the glycerine *producing* industry was actually operating at about two per cent below last year's output. Of course, the refining and sale of imported crude were in addition to this.

The production picture for 1957 is spelled out in somewhat more detail in Figure 2. You can see that the short-term relationship to soap production is becoming less clearly evident. This might be ascribed to the tendency of synthetic glycerine output, instead of being a constant additive to glycerine from fats, to be adjusted so as to fill in the gaps. We know, too, that total glycerine from fats is, in itself, less well correlated to soap output. Production of fatty acids and fatty alcohols and other non-soap detergent bases, for example, is not reflected in our quarterly soap sales census. Also, in 1957 we have noted sales of hydrolyzed or "split" or tallow-acids fats for animal feeds—presumably with the release of glycerine for refining.

Perhaps the most intriguing question that will arise when our production estimate of 238 million pounds is confirmed or modified by final 1957 government figures, is this: What is this year's proportion of production, as between fats and propylene as raw materials? The latter, I suspect, has remained in the neighborhood of 100 million pounds. This suggests 138 million pounds for domestically produced natural glycerine. The changing factor here this year has been the rising importation of crude glycerine – estimated for the year at about 25 million pounds . . . perhaps 10 million more than in 1956. This 25 million pounds of glycerine—refined in domestic plants almost exclusively—has no doubt been a factor in keeping a check on the full productive capacity of glycerine-from-propylene plants. Net imports, after sales of some nine million pounds of refined glycerine abroad, come to 16 million pounds. Figure 3, showing net foreign trade, puts the 1957 figure in perspective.

Another interesting question is: Will the free availability of foreign crude continue? My own impression is that—despite the trend to detergents, an overall increase in

Figure 3.



world soap production in more primitive but highly populous countries is continuing for the present. To some extent, this reflects exports of tallow and grease under U. S. support programs such as PL-480, but most of our glycerine-supplying countries are on a somewhat firmer commercial basis of operation so it is not likely to terminate suddenly. In the countries of growing soap usage, the more technically sophisticated uses of glycerine – except for dynamite – have not begun to take their share. This means more offerings. At the same time, in England and on the continent, the last few months have shown a shift in the direction of increased consumption of crude from abroad. A market expansion program in which our British counterpart has been engaged seems to have taken hold. Sometime next summer, Europe's first synthetic glycerine plant is scheduled to come on stream, and its effects on the crude movement remain to be seen.

The U. S. user of refined glycerine, of course, reaps a temporary benefit from this situation: He finds that glycerine from foreign crude supplements the more constricted U. S. supply of the refiner to a point that gets the refiner out selling again. When the buyer asks for service, he gets it. At the same time, the user runs less of the usual risks in depending upon a product whose adequacy of supply is derived from intermittent foreign offerings. Extra capacity to produce glycerine from propylene is available and more is still to come, so that foreign crude could "dry up" tomorrow without creating the slightest dip in the supply curve. We should note, though, that these imports act mainly to smooth out the operations of existing glycerine refining capacity, formerly used for domestic crude. It is not new capital investment in expansion of refining output, but a move toward optimum operating rates. Thus there is a definite limit to the penetration of foreign crude with growth of the American market, as things now stand.

Similarly, announced increases in synthetic glycerine capacity for 1958 and 1959 may not bear upon the market as such unless the need actually arises. In one plant announcement, the specific statement is made that the new facilities will replace others which will be diverted to allyl chloride derivates.

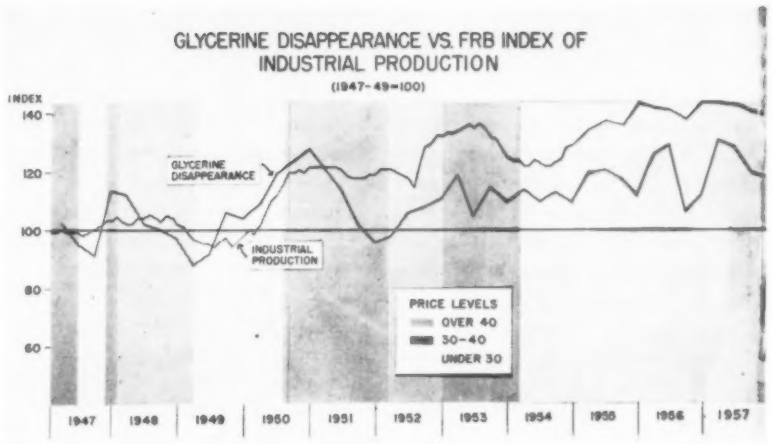


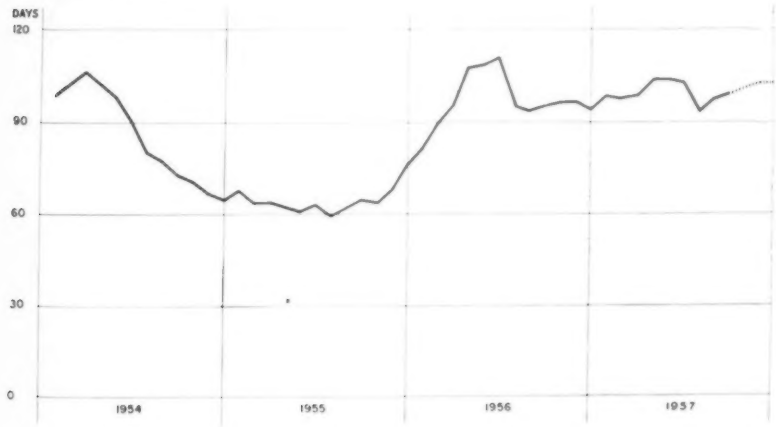
Figure 5.

Although calculations have been publicized by a process licensor that fermentation glycerine can undersell that from propylene at today's low blackstrap molasses prices, the plant designs are so far only on paper. It certainly will not be a factor in 1958.

Last year, for the first time, I showed a curve representing stocks levels during 1956 in terms – not of pounds – but of days of supply at estimated demand rates for the months just ahead. That is, if we foresee 20 million pounds a month demand for January, February and March, then a 60 million pound stock, as reported by the Commerce Department, would represent ninety days. It is highly significant, I think, that this supply level has been maintained for about 20 months within a range of 95 to 107 days. The figures appear on Figure 4. You will note that this stocks level figure must be corrected, three months back, after the actual consumption figures are in. So far these corrections have not thrown us seriously out of line. Stocks are actually at the level which maximizes service.

For example, the most recently estimated supply level, 104 days as of December 1, is certainly not excessive. It probably represents a larger ratio of producers' stocks (now widely distributed at

Figure 4. Glycerine supply level by months 1956-57; Source: Based on U. S. Department of Commerce data.



accessible stock points throughout the country), as compared with consumers' stocks. The consumer's tendency here, is following the general chemical purchasing pattern of recent weeks to adopt hand-to-mouth buying schedules.

This brings us to the more critical question, of course, of glycerine sales in the months ahead. Here we are, equipped to add another 30 to 40 million pounds to our American synthetic production, with more on the way both here and abroad if needed. How much of it is there going to be a market for?

Let's recheck for a moment our index of glycerine consumption as compared with the F.R.B. industrial production index (Figure 5). Using the 1947-49 base-year index ratios as a quota, we should have consumed 275 million pounds of glycerine in 1957, as compared with the actual 248 million level. I have a suspicion, though, that in periods of heavy capital construction, such as in this 1955-1957 rise, the metals factor in the make-up of the industrial index intensifies the divergence in these curves. If, as predicted, there is a further decline in the F.R.B. industrial index this spring, I think we could count on a narrower gap. The Department of Commerce has recently predicted an overall gain in industrial chemicals of five per cent for 1958; this is in contrast to no gains for aircraft, copper mining, machine tools and the like. Glycerine, I believe, will follow the chemical industry pattern. In other words, I am sticking my neck out and saying that glycerine consumption will do better—relative to general industrial business—in 1958 than in 1957.

To justify such a statement, of course, it is necessary to turn from statistics to technology for a moment, and see what the situation is in specific fields of glycerine use.

Technology

GLYCERINE used in alkyd resins, which has always been the "swing-factor" in glycerine demand, reflects competitive conditions in the paint industry at several different levels. First, the total protective coating trends, as determined by new automobiles, homes, appliances and industrial construction. Second, paint vehicle trends, alkyds versus acrylics or vinyl water-emulsion paints, for instance. Third, the polyol trends, glycerine versus PE and the glycols.

I think that 1957 figures will confirm the fact that substitution of other polyols for glycerine is not our major problem at the moment; the key problem is the future of alkyd vehicles overall. New copolymer systems and emulsions in which alkyd vehicle is incorporated will be expected to keep glycerine in the picture, but they hardly promise the former steady growth of the alkyd market up to 1955 or so, unless there is an unexpected technical break-through. Apparently, in 1957, alkyd business levelled off at about the 1956 level —which is some five per cent or so below 1955.

Growth in glycerine consumption in 1957, therefore, cannot be ascribed to alkyd resins, although it seems to have held-up better than some competitive polyols. Pentaerythritol, reported for 10 months, shows a decrease of five per cent. There are no accurate glycerine end-use figures, but I doubt that former estimates of up to 70 million pounds of glycerine used in alkyds will be exceeded in the coming year.

The use of glycerine in dynamite and other explosives is another field where a gradual decline in the peacetime market is to be expected. Plus factors such as the national road building program must be balanced against minus factors such as the expanded use of glycols in dynamite and of ammonium nitrate in place of nitro glycerine. As an example, when Atlas Powder exploded a 2.2 million pound blast in building the Salt Lake Causeway – 60 per cent was dynamite – 40 per cent ammonium nitrate blasting agent. 1957 also saw a decrease in some demands of the military services. There have been no reports, in public stories of greatly expanded solid propellants for rockets, that formulations with a glycerine base have moved into the big time, space rocket field. Consumption estimates on which certificates of necessity were issued, however, suggest that other restricted uses in ordinance are in the military picture.

Last year, there was some concern over the trend in cigarette consumption, as it might be influenced by allegations of cancer dangers. Recent figures showing a new high in total consumption of cigarettes of 441 billion suggest that the "statistical" scare has been ineffective. Consumption is up four per cent from 1956. Also, glycerine has held its place without serious challenge as the preferred humectant. Consumption in this field has probably risen from a previous 30 million in 1950 to a level of 35 million pounds in 1957. More in 1958 is a possibility.

Cellophane production has been another glycerine-using field with a good growth rate in 1957, and one in which glycerine has held its own against proposed substitutes. This looks like another 30 million pound market.

The output of toilet goods, cosmetics, including tooth pastes and shaving creams, has been reported as gaining these last few years, at a somewhat more rapid pace than population. What we have lost to dry shavers we seem to have gained in aerosols. The conventional tooth paste formulations seem to survive each year's crop of additives. While we in the association will certainly deny there is such a thing as detergent hands, we will not protest the rising use of glycerine-containing hand emollients to combat the condition – whatever its source. The other day, we read that in 1957 for the seventh successive year, the United States had a record crop of babies. I have not converted this into an annual increase in square inches of skin, but as the girl babies among them grow up, no doubt your im-

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Analysis of Nonionic Surfactants

By Sidney Siggia*
General Aniline & Film Corp.
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Easton, Pa.

IN THE formulation, and use of nonionic surface active agents, there are three general types of analyses of value: (1) characterization methods to determine the composition and structure of nonionic; (2) quantitative methods to determine the nonionic component in mixtures such as a finished formulated product. The nonionic content in these cases is fairly high, generally five per cent or greater; (3) quantitative methods to determine small amounts of nonionic in complex mixtures such as occur in the application of surfactants.

Characterization: The objectives of a characterization of a nonionic fall into three categories:

1. Identity of the nonionic as a whole;

2. Identity of the hydrophobic portion only;

3. Ratio of hydrophilic portion to hydrophobic portion.

In terms of characterizing the different classes of nonionics, Steele & Berger (15) observed that a combination of density and cloud point of a nonionic could serve to indicate the type of nonionic under study. A plot of density versus cloud point for nonionics showed that each class of nonionics fell in a different zone on the graph. The classes of nonionics plotted were tall oil esters, polyoxyalkylated phenols, thioethers, and alcohol ethers.

The most conclusive and most rapid method available today for identifying a nonionic is infrared absorption. The American Society for Testing Materials (8) has published infrared absorption curves for most types of known nonionic surfactants. Therefore, the first step to be taken in an identification is to obtain an infrared absorption curve on an unknown and to compare this with the curves for the known materials. If a matching curve is found, then the identification is complete with no further work required. However, if no matching curve is found, then the problem of identification becomes more complex though infrared absorption can help in these cases as well. Infrared will differentiate the aromatic from the aliphatic hydrophobic nucleus. Also, it will differentiate between the alcohol, phenol, amine, amide, carboxylic acid, or mercaptan type hydrophobe. Applications of infrared absorption to the qualitative and quantitative analysis of organic compounds is discussed by Siggia and Stolten (14).

The hydrophobic group can also be identified by reacting the nonionic surfactant with hydrobromic acid (18) or hydrochloric acid (2). The acid will cleave the polyglycol chain to the dihalo ethane (or dihalo propane as the case may be) and yield the corresponding alkyl halide from an alcohol hydrophobe; aryl halide from a phenolic hydrophobe; carboxylic acid from the carboxylic and amide hydrophobes. The hydrobromic acid reaction is preferable to the hydrochloric acid treatment due to the speed and completeness of the reaction. The amine hydrophobes do not give clear cut reactions and the mercaptan hydrophobes are reacted beyond the desirable limits; possibly they are oxidized to the corresponding disulfide or beyond that to the corresponding sulfonic acid.

It is well to state that the method of choice for identification of the derivatives prepared via the hydrohalogen acid treatment is infrared comparison against the derivatives from known hydrophobes. The more classical techniques such as melting or boiling point; elementary analysis; refractive index can also be used to characterize the derivative of the hydrophobe but these yield less conclusive identifications and generally require the derivative to be rather pure. Since the hydrophobes used in nonionics generally are a range of similar compounds, it is almost impossible to obtain a pure derivative. Infrared does not require a rigidly pure derivative and also if the derivative is not one of the suspected compounds, infrared will yield clues as to what type of compounds it could be (14). It is well to indicate that relatively inexpensive infrared instruments are now available which are adequate for the purposes discussed in this paper.

Rosen (6) devised a test using sulfuric acid and formalde-

* Paper presented during 44th annual meeting, Chemical Specialties Manufacturers Assn., Hollywood, Fla., Dec. 11, 1957.

hyde which gives a characteristic red color when used with nonionics containing a phenyl nucleus. Also, Kortland and Dammers (2) devised a scheme of separating and identifying nonionics in mixtures with other surfactants.

Another characterization aspect involved in the analysis of nonionics is the ratio of the hydrophilic portion of the nonionic molecule to the hydrophobic portion. It is this ratio that generally governs the behavior of the nonionic (3). If the hydrophobe is known, then infrared absorption will yield the length of the polyethylene or polypropylene glycol chains. Compounds with known polyglycol chains on known hydrophobes are required for this analysis but once the calibration is established for each hydrophobe, the analysis of unknowns generally requires only a few minutes.

Cloud Point Method

CLOUD point is another method for determining the hydrophile-hydrophobe ratio. The cloud point of a nonionic is the solubility limit under specified solution conditions. The solubility limit, of course, is directly related to the hydrophile-hydrophobe ratio. One general method for cloud point determination is the solution of a given amount of a nonionic in a given volume of water containing a stated concentration of an inorganic salt. The temperature of the solution is then varied until the solution becomes turbid. This temperature is then listed as the cloud point. To obtain the hydrophile to hydrophobe ratio, a calibration curve is established for cloud point versus the ratio; this is done using known nonionics of varying ratios. It is well to state that there is no one specific method for determining the cloud points of all nonionics. The solubility characteristics of the nonionics vary so widely that many different solution conditions have to be used to cover all the nonionics presently being manufactured. A cloud point method was devised by Weeks, Lewis, and Ginn (17) which utilizes solution of the nonionic in a dimethylformamide-benzene system and titration of the solution with water to the first turbidity. The ratio of hydrophile to hydrophobe controls the water needed to cause the turbidity. Fatty alcohol and alkyl phenol condensates with ethylene oxide were studied using this method.

The hydrophobe-hydrophile ratio can also be determined using density (15) or refractive index (3) measurements. These approaches require calibration curves of density or refractive index versus the hydrophile-hydrophobe ratio for the nonionics involved.

Elementary or functional group analyses can also be used to determine the hydrophile-hydrophobe ratio. If the identity of the hydrophobe group is known and it contains nitrogen or sulfur, then quantitative analyses for these elements can yield the hydrophile-hydrophobe ratio. Also, analysis for the terminal hydroxyl group (5), (11) will yield the ratio of hydrophile to hydrophobe if the identity of the hydrophobe is known. Along the same lines analyses for amino groups can be used in cases of amine-alkylene oxide condensation products (12).

The above methods for determining the hydrophobe to hydrophile ratio can only be used if the identity of the hydrophobe is known. Methods also exist for the determination of the hydrophile portion of nonionics independent of the hydrophobe portion. These methods then can be used to determine the ratios in compounds of unknown hydrophobic groups. Morgan (4) describes a method for determining polyglycol ethers and esters using hydriodic acid. The ether linkages are split yielding ethyl iodide and ethylene from the polyglycol chain. These fragments are collected and measured.

Siggia et al (13) have simplified this method so that only the iodine liberated by the hydriodic acid reaction need be titrated with thiosulfate. The latter paper has also extended the approach to polyoxypropylene chains as well as the polyoxyethylene chains. The hydriodic acid approach cannot be used for polyglycol chains stemming from nitrogen or sulfur atoms. Also sulfated polyglycol chains cannot be analyzed by this method.

$$-(CH_2CH_2O)_x- + 2x\,HI \longrightarrow xI\,CH_2CH_2I + xH_2O$$

$$I\,CH_2CH_2I \xrightarrow{\text{decomp.}} CH_2 = CH_2 + I_2$$

$$\xrightarrow[HI]{} CH_3CH_2I + I_2$$

Quantitative determination of nonionics in mixtures containing more than 5% nonionic. The most common examples of the mixtures with which this section will deal are the formulated nonionic materials. Analysis of these mixtures can sometimes be applied to the mixture as is, or separation techniques can be applied to remove the nonionic from interfering components in the sample.

Quantitative determination of nonionics in mixtures without separation of components. It is always ideal to analyze samples as received whenever possible since separations are usually quite time consuming. It is possible in many instances to measure quantitatively a nonionic in mixtures without any separation. Ultraviolet absorption techniques, for instance, are applicable for determining nonionics containing phenyl groups (2). Many formulated products do not contain components which absorb in the ultraviolet region of the spectrum other than the phenyl containing component.

Infrared absorption cannot generally be applied to mixtures as discussed in this section since most of the components of formulated nonionics absorb radiation in this region of the spectrum.

Elementary analysis for nitrogen and sulfur can be applied to determine nonionics in these mixtures in instances where the nonionic alone contains these elements. Enough such instances occur

to make this approach worth mentioning.

The hydriodic acid reaction mentioned above (4), (13), for determining the polyglycol chain can also be used to determine the nonionic in these formulations since the method has a fairly high degree of specificity. Sulfate ion is the most common interference. Also, the hydroxyl analysis (5), (11) for determining the terminal hydroxyl group can sometimes be applied.

Shaffer & Critchfield (10) determined nonionics in mixtures by precipitation with either phosphomolybdic acid or silicotungstic acid. The phosphomolybdic acid precipitate is determined colorimetrically; the silicotungstic precipitate is determined gravimetrically. This method has a fairly high degree of specificity. Oliver and Preston (6) also used the phosphomolybdic acid method of determination.

Schonfeldt (9) utilized potassium ferrocyanide to precipitate the nonionic. The precipitate is then filtered off and the residual ferrocyanide in the filtrate is then titrated with zinc sulfate using potassium ferricyanide - diphenylamine indicator.

Of course, when a mixture is too complex for analysis of the material as received, separation methods can sometimes be applied to resolve the mixture to a sufficient degree to permit analysis. The two most commonly applied separation techniques used in the analysis of mixtures containing nonionics are extraction and ion exchange.

Separation Techniques

a. Extraction

IN SOME instances the nonionic in a solid formulation can be extracted using a suitable organic solvent (2). The nonionic is determined by either weighing the solid before and after extraction or by taking an aliquot of the solution after extraction, evaporating the solvent, and weighing the residue. Obviously this method can only be applied to samples where the nonionic is the only component soluble in the solvent. Fortunately most of the other components in solid formulated materials are inorganic salts and polar organic materials and as such are generally insoluble in organic solvents, especially the less polar solvents.

In cases where some other components are extracted along with the nonionic, the extraction approach obviously cannot be used as described above. However, even though the nonionic has not been isolated, the extraction often does separate the nonionic from a component which interferes in one or more of the chemical or instrumental analyses discussed above. Thus the extract can then be analyzed by these methods with no interference whereas the original sample could not.

b. Ion Exchange

Most of the components in a nonionic formulation are ionic in nature. Thus ion exchange provides an ideal method for separating the nonionic component from the ionizable components. Weeks, Ginn, and Baker (16) describe the ion exchange separation technique for isolating nonionic surfactants from mixtures containing ionic surfactants. The amount of nonionic in these mixtures was determined by taking the deionized solution of the sample and evaporating it to dryness, the residue was the nonionic.

Most builders and modifiers used in formulations are ionic in nature and thus can also be separated by this technique quite readily.

As in the case of extraction, ion exchange cannot always achieve complete isolation of the nonionic. However, the separation of nonionic is often effective enough so that some of the chemical or instrumental analytical methods discussed above for determining the nonionic might be applied using the deionized sample which was not possible with the original sample.

Determination of nonionic components in mixtures containing less than 5% nonionic: This section encompasses analysis of those formulations which contain a small percentage of nonionic. Also, the application of nonionics to actual use operations often necessitates the determination of small amounts of the nonionic in the applied system. These mixtures are generally quite complex due not only to the components present in the nonionic formulation but also to all the components present in the operation to which the surfactant is applied. These systems thus require analytical methods with high degrees of specificity for determining the nonionic components. Also, the concentration of nonionic in these systems is often very low; as low as a few parts per million in many cases; this condition then demands a method with a high degree of sensitivity.

The gravimetric phosphomolybdic acid and phosphotungstic acid methods (6), (10) and the volumetric ferrocyanide method (9) discussed previously can be applied for the determination of nonionics in the range of concentration with which this section deals. These methods have the specificity but, in general, cannot be applied for determining nonionics in concentrations of less than 0.1 per cent. The colorimetric approach (10) using phosphomolybdic acid can be applied to systems containing somewhat smaller amounts of nonionics though systems containing less than 0.02 per cent cannot generally be handled except in some fairly well defined systems.

The best method yet found for traces of nonionics (one per cent) is that of Kho and Stolten (1). This method utilizes potassium iodomercurate which forms a turbidity with low concentrations of nonionics. Comparison of the turbidity against standards (visually, colorimetrically, or nephelometrically) yields the content of nonionic. The method will detect one-10 parts per million in many though not all instances; a limit

(*Turn to Page* 133)

Household Detergent Sales . . .

With some observations on the factors involved in building and maintaining successful products in changing world

By Arthur C. Nielsen, Jr.*
President
A. C. Nielsen Co.

CHANGE is a condition which is particularly noticeable in the highly competitive fields of retail distribution, but we realize that many of the same trends that show up in the consumer field are also felt in the non-household or industrial fields. The same principles of marketing —and of product and marketing research—apply in most cases, although perhaps in varying degrees.

Before giving you the broader picture as we see it, I should like to review a few of the most important trends we have observed in the retail field, particularly as they affect household detergents and related items.

Chart 1 measures the recent progress of grocery stores. A two-way measurement is provided—grocery stores versus their past performance and grocery stores versus consumers' disposable income, i.e., what consumers have had to spend for all goods and services plus what they could save after paying federal and state income taxes.

Grocery stores have done well on both measurements. Dollar sales have increased each year with 1957 sales estimated to be eight per cent above 1956 and 26 per cent above 1953. Inflation played a part only in the increase from 1956 to 1957 as food prices moved up three per cent.

Grocery store sales have increased slightly more than consumers' disposable income over the five-year period primarily as a result of a sharper gain in 1957. This would signify that grocery stores have maintained, or slightly expanded, their proportion of total consumer spending and savings as consumer disposable income has risen.

The grocery store products, household detergents, with which we are most directly concerned, have had a more favorable trend than total grocery store sales in recent years.

Chart 2 repeats the total grocery store sales trend from the previous chart for comparison with the consumer dollar sales of household detergents.

The term "household detergents" as we use it covers packaged soap and synthetic detergents including liquid types, toilet soaps and white floating soaps.

In each of the last four years, dollar sales of household detergents

* Based on a talk given during the 31st annual convention, Association of American Soap & Glycerine Producers, New York, Jan. 23, 1958.

Chart 1. Grocery store sales versus disposable income; 1953 equals 100. Figures for 1957 are estimated based on data for nine months.

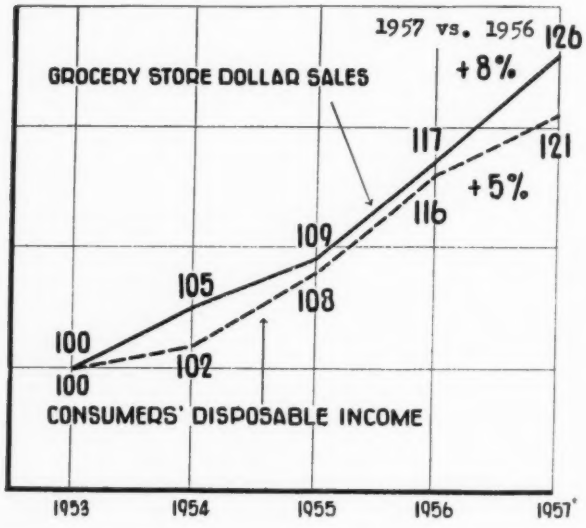
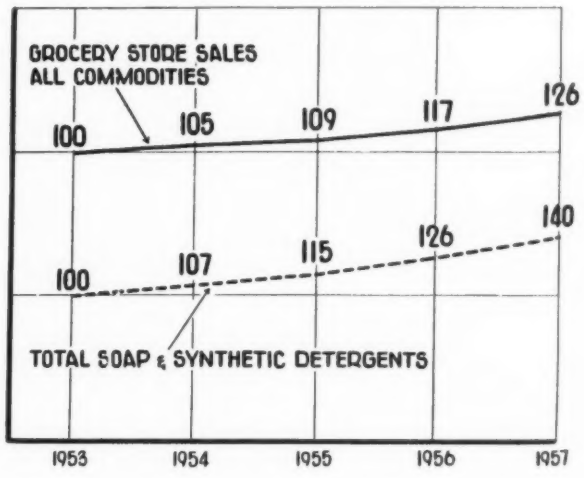


Chart 2. Household detergents sales versus total grocery store sales; 1953 equals 100 on customer dollar basis.



have recorded larger year-ago gains than total grocery store sales. The cumulative effect has been a 40 per cent gain for household detergents over the five year period, compared with the 26 per cent increase in total grocery store sales. We believe the introduction of new products and aggressive promotion have contributed materially to the relatively better trend for household detergents.

The gain shown for household detergent dollar sales has been brought about primarily by increased consumption.

In Chart 3 it should be noted that household detergent sales from 1953 through 1956 had practically parallel trends in dollars and tonnage. Higher prices entered the picture in 1957 and dollar sales rose 11 per cent versus what was still a substantial six per cent increase in tonnage sales. Over the five year period grocery store sales of household detergents measured in pounds or tonnage have risen 30 per cent in the face of an eight per cent population increase.

Chart 4 which shows grocery store trends for packaged detergents and toilet soaps separately provides an interesting picture of the apparent influence of new products on growth. We are all familiar with the product changes that have occurred in packaged detergents during the past five years.

Up until recently, product changes in toilet soaps have been relatively limited in nature and scope and, for the most part, have merely produced shifts in competitive shares. Recently a variety of changes have occurred which collectively were accompanied by an accelerated expansion in total volume, including new packaging, a kaleidoscope of colors, combination ingredient products and synthetic detergent bars.

The recent resurgence of toilet soap sales is clearly shown in Chart 4. Between 1953 and 1955 toilet soap sales moved up only six per cent while packaged detergent sales were increasing 14 per cent. Although the pace of toilet soap accelerated in 1956, the gain still lagged behind that of packaged detergents. However, in 1957, toilet soap sales rose seven per cent while packaged detergent sales were increasing six per cent.

Chart 5, which adjusts household detergent sales for population growth dramatically spotlights the expansion that has occurred in toilet soaps and packaged detergents. Toilet soap sales have increased faster than population—one per cent more a year—in 1954 and 1955, three per cent more in 1956 and five per cent more in 1957. Packaged detergent sales showed greater gains versus population in each year except 1957 and by 1957 per capita consumption had increased 26 per cent over 1953 versus 10 per cent for toilet soaps.

The 10 per cent increase for toilet soap is a worthy achievement even though it is well below the 26 per cent increase for packaged detergents. The latter surely has been the beneficiary of widened use of automatic washers. Regardless of the relative showings, grocery store sales of both toilet soaps and packaged detergents have been greatly helped, we believe, by new or changed products.

It is hardly possible to look at your morning newspaper and not see evidence of some new change in our basic economy or in

Chart 3. Household detergents grocery store sales (dollars vs. tonnage).

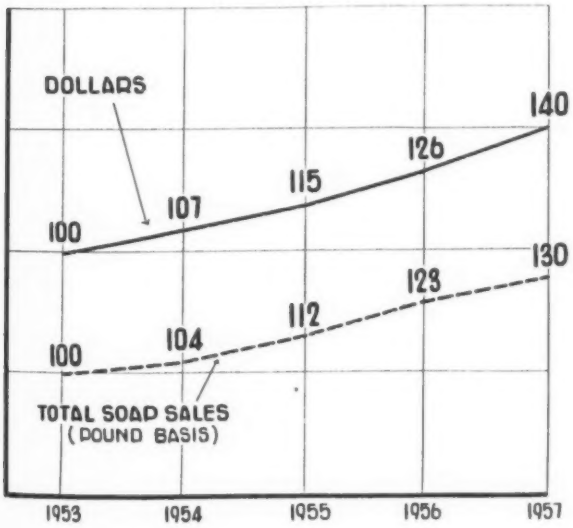
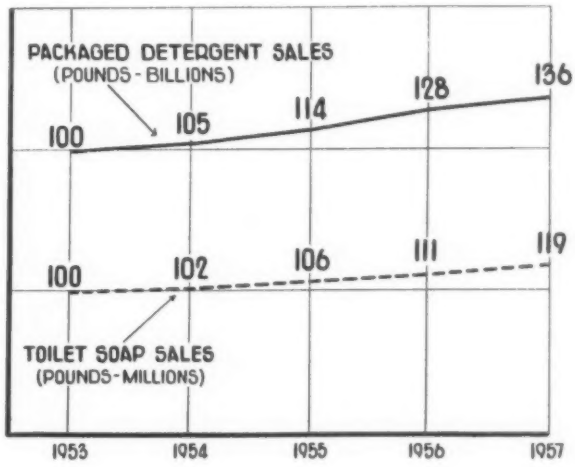


Chart 4. Grocery store sales trend, packaged detergents versus toilet soaps; 1953 equals 100 on a pound basis.



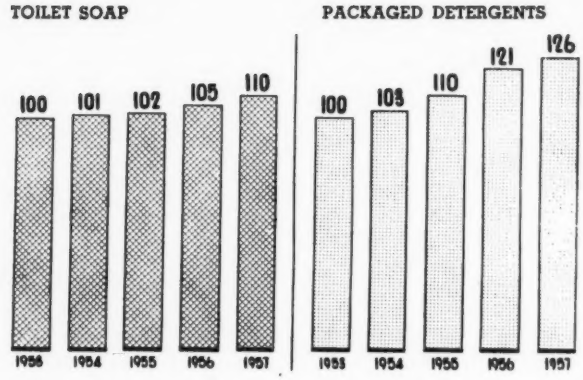


Chart 5. Grocery store trend of packaged detergents and toilet soaps. Adjusted for population change.

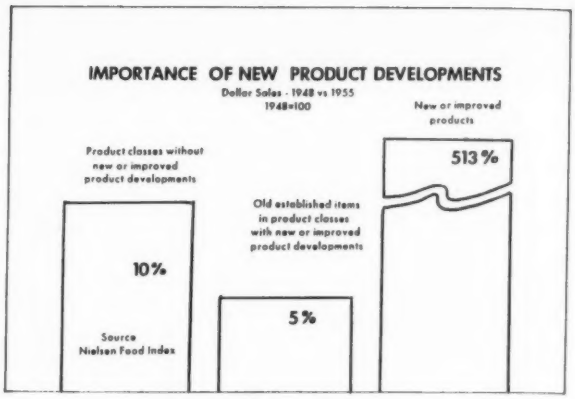


Chart 6.

our markets. Population, income, working hours, every facet of our economy is changing.

And because these changes are taking place, in marked contrast to what we see in our research in certain other countries, *the United States buyer is open-minded and receptive to change.* Every business operating in this country today is more vulnerable to competitive inroads because the buyer will shift his allegiance quickly to a better product.

I believe this applies to small business as well as large—to industrial sales as well as consumer sales—even though it is more noticeable in the highly competitive retail lines.

Let's examine the consumer sales trends of two groups of selected food commodities. First, there are quite a few commodities which have not had any significant new or improved product developments in the past 10 years. Sales of these commodities have expanded 10 per cent in the last eight years.

Secondly, there are commodities which have had real product developments: The old established items in this group rose only five per cent in sales from 1948 to 1955—but the new or improved products gained 513 per cent. (Chart 6.)

In some cases the new products have cut into the sales of old, established items. But over-all, the introduction of these new products has resulted in a 78 per cent gain for the combined total.

Even within product groups we have seen new leaders developed—within a group of 100 food and drug commodities, *three out of every 10 leading brands* were knocked out of first position in the last 10 years by new brands.

We believe a company has a greater need than ever before for skillful, effective marketing management. Why?

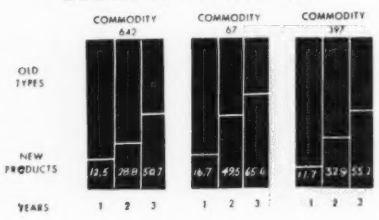
1. To capitalize promptly on product innovations developed by research and development laboratories.
2. To buy time for the company fighting a delaying action when competition has developed temporary product superiority.

For these and many other reasons, we believe the most successful companies will be those who exercise the best marketing judgment and who utilize most skillfully the marketing facts at their disposal.

However, underlying all the facts and figures is the human element—sales managers, salesmen, advertising and merchandising men, management engineers, marketing experts—all are people.

But so long as we do have personnel judgment entering into marketing decisions we will have different ideas as to how a product should be sold. And as there will always be one way better than the others — we will probably always have errors in marketing.

Chart 7.



A survey made by our company a few years ago indicated that in marketing decisions, executives are right or substantially right only 58 per cent of the time. But much can be learned from the errors of others. With this in mind, I would like to cite to you what I believe are the 13 most common marketing errors in business today.

1. *Failure to keep product up to date.* The most important lesson we have seen repeated year after year is: *First* you must have a good product—a modern product suited to the needs of the market. With a product disadvantage at the start, in spite of all of the best sales and advertising efforts, success will be brief. Chart 7 shows three-year records on three food and drug commodities. In each case, any brand which did not come out with an up-to-date product was automatically limited to less than half of its previous potential.

Timing is of vital importance in keeping the product up-to-date. In many cases, the initiative in a market by a leader has been lost due to reluctance to change quickly after customers had clearly indicated preference for another product.

In my opinion, a sales manager should not be dominated by

engineering and production departments, as far as building sales appeal into a product is concerned. However, the sales manager must be sure he is right before he gets engineering and production to follow his ideas.

2. *Failure to estimate the market potential accurately.* When entering a new market, it is easy to let one's enthusiasm run away with regard to prospects of future sales. There is a natural tendency to overstate the ultimate amount of business which can be achieved. Budgets must be drawn up based upon some estimate of the volume of business which can be expected. If the production facilities are too large:

(a) overhead expenses often become burdensome,

(b) the resulting price of the finished product becomes too high – with the result that this drag is too much for the sales and advertising program to overcome and the product fails. . . .

Conversely, many assess their potential smaller than actually available. In this case there is a real danger that an originator's market will be stolen from him as a result of an aggressive competitor who correctly judges the potential market and makes his efforts on a larger scale. In this example Company "A" invented the product—but Company "B" outspent "A" by about a five to one ratio. Company "A" lost its originator's advantage – in a market which has since grown to $24 million a year – and is still growing.

Closely related is error number 3: *Failure to gauge the trend of the market.* Obviously, if the potential market is changing in size, many adjustments in the marketing program have to be made—either up or down.

Now, these last two errors lead to our fourth: *Failure to appreciate regional differences, in market potential and in trend of market.* Ours is a vast and complex country—you need detailed information by various types of market breakdown, if you are to make sound distribution of sales and advertising efforts.

The variations between the patterns of *circulation* of advertising media, and the *demand* for products, adds to the difficulty of achieving an optimum allocation of your advertising. To bring these two factors into balance requires much detailed work – even when facts are available. But it must be done if each advertising dollar is to do its work effectively.

The same dangers are present in distributing sales effort by markets. Getting the right number of men in an area, achieving the proper number and frequency of sales calls throughout the year as well as by size of account and by size of city—all take much detailed effort if profitable results are to be obtained.

Closely allied to regional differences is error number 5: *Failure to appreciate seasonal differences in your buyers' demand.* A good number of food and drug commodities have significant seasonal fluctuations. But in many cases manufacturers concentrate their advertising and promotional efforts within the few months of the peak of the season—and withdraw it almost entirely during the so-called "off-seasons"—even though those off seasons may represent 25 to 50 per cent of the total year's sales.

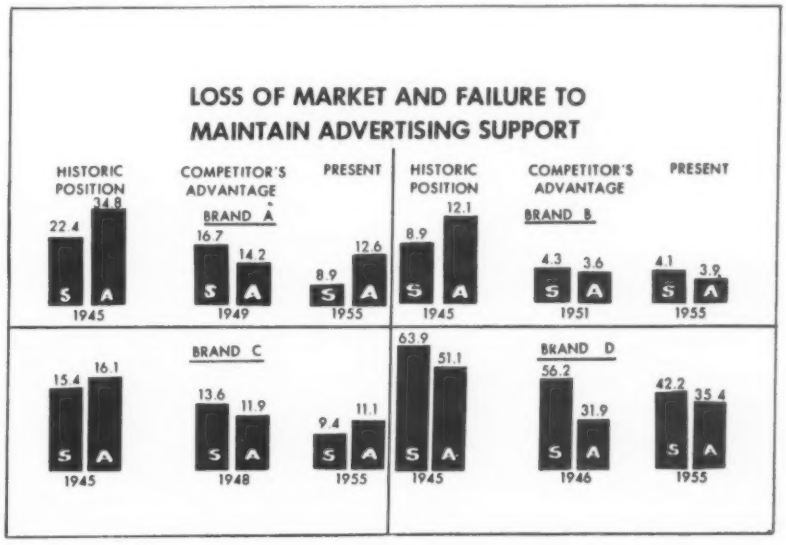
During the so-called "off-season," the sales force must get orders as best it can without the promotional support so necessary in maintaining both dealer and consumer interest in the product.

Recently the marketing manager of one of our clients suggested, "Why not increase the off-season advertising expenditures in one small part of the country? And let's see what happens." Sales and share-of-market trends during the following year and a half test showed definite improvements – i.e., seasonal trends were leveled out to some extent resulting in lower cost of manufacture and sales—and an increase in profit. In addition, a larger share of the total market was obtained and it could be handled with existing production facilities because former production peaks had been flattened.

The same point can be made with respect to timing of sales effort on a seasonal product. We have seen many examples of aggressive sellers beating competition by a week or two with the result that the trade was already loaded when the more deliberate seller made his call.

The next error is: 6. *Failure to establish the advertising budget by the job to be done.* Too many manufacturers appear to be using

Chart 8. Four cases where advertising cuts helped to perpetuate temporary sales lags.



some historic formula for establishing their advertising budgets—such as a certain per cent of sales. In our experience, any company which continues to set its advertising budget based upon sales performance alone, is asking for trouble.

Take, for example, the condition which prevails as sales level off or go down. Advertising expenditures are automatically reduced. But this may be the very time when the sales force needs extra pressure on the consumer. A vicious cycle commences and the brand is often hastened to its doom by withdrawal of the very force which had previously helped build its sales.

It's important to keep an advertising budget flexible. Don't let the budget rule your actions should things go wrong. Too many times a company loses out because someone says you can't do something which obviously needs to be done simply because it's not in the budget.

Chart 8 is a record on four brands which lost substantial volume to competitors through failure to spend enough money on advertising. Each brand had been the leader in its field in 1945. The bar labeled "S" indicates the brand's share of sales and the bar labeled "A" indicates the brand's share of advertising.

In each case one of the brand's competitors discovered something which should have amounted to only a *temporary* edge. In case "A", a competitor developed a radically different and improved product. This occurred in the spring of 1948.

Sales of Brand "A" were immediately cut back. In order to maintain a profit position, the company cut its advertising appropriation sharply and reduced its sales force. Further declines in sales followed this move. While Brand "A" brought out a product similar to its new competitor in the summer of the following year, it had lost so much ground in the interval that it has never been able to recapture its former position. This has occurred despite the fact that in recent years its share of advertising and other sales expenditures have consistently exceeded its share of sales.

REPRINTS of "Surfactants Listed," part IV of which appears in this issue of Soap & Chemical Specialties, and concludes in the April issue, will be available shortly for $2.50 each. Copies of the reprinted list will be published as an 8½ x 11 inch booklet of 72 pages with a heavy paper cover. Address requests to John W. McCutcheon, 475 Fifth Ave., New York 17, N. Y.

The loss for Brand "B" was also generally attributed to an improved competitor's product. Brand "C" was affected by a competitor's more effective type of distribution—and Brand "D" was cut back, we believe, due to its failure to offer its product in a more desirable package. Naturally, in all of these four cases, there were many other factors involved as well.

The point I wish to make is, that each company, witnessing its sales decline for reasons which were *not then* clear, compounded their difficulties by withdrawing promotional support in an effort to maintain profits.

This leads to our next most common error: 7. *Failure to adhere to policies established in connection with long-range goals.* Once a goal has been set, there is a great temptation to shift policies whenever minor setbacks occur. Today's marketing executive must school himself in patience and allow ample time for a significant trend to develop. It is necessary to measure progress often in terms of less than half a percentage point in a market. This requires the most accurate statistics possible; otherwise the true trend may be masked by mere statistical variations in the reporting service.

Once you have set your sights on your long-range goal, stick to your guns and allow enough time

(*Turn to Page* 223)

Surfactants Listed . . .

Fourth revision of synthetic detergents and emulsifiers

Part IV

By John W. McCutcheon

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Perclo X-180 X-390	Perry Brothers, Inc.		Emulsifier	Liquid		Nonionic	An alkali and acid stable opacifier for cold waves and in other non-edible emulsifiers
Perma Kleer 80	Refined Products Corp.	Hydroxy alkyl ethylene diamine tri acetic acid sodium salt	Sequestrant	Liquid	42%	Anionic	General sequestrant for divalent metals and iron
Perma Kleer 80 Crystals	Refined Products Corp.	Trisodium salt of hydroxy alkyl ethylene diamine tri acetic acid	Sequestrant	Crystals	82%	Anionic	Crystalline form of "Perma Kleer 80" (non-hygroscopic)
Perma Kleer SP	Refined Products Corp.	Modified hydroxy alkyl ethylene diamine tri acetic acid sodium salt	Sequestrant	Powder	90%	Anionic	Efficient sequestering agent for iron in pH 2-12, and simultaneously chelates divalent metals
Perma Kleer OH	Refined Products Corp.	Modified hydroxy alkyl ethylene diamine tri acetic acid sodium salt	Sequestrant	Liquid	55%	Anionic	Iron sequestrant in caustic alkali solutions
Perma Kleer Acid (EDTA-CP)	Refined Products Corp.	Ethylene diamine tetra acetic acid	Sequestrant	Crystals	99%	Anionic	High purity sequestrant for divalent metals; must be solubilized by alkalies or amines
Perma Kleer 110	Refined Products Corp.	Tetra sodium salt of ethylene diamine tetra acetic acid	Sequestrant	Liquid	39%	Anionic	High purity sequestrant for divalent metals; pH 10.4-10.8
Perma Kleer Tetra Crystals	Refined Products Corp.	Tetra sodium salt of ethylene diamine tetra acetic acid tetra hydrate	Sequestrant	Crystals	85%	Anionic	Non-hygroscopic crystalline form of "Perma Kleer 110"; pH 10.4-10.8
Perma Kleer Tri Crystals	Refined Products Corp.	Trisodium salt of ethylene diamine tetra acetic acid	Sequestrant	Crystals	87%	Anionic	Non-hygroscopic crystals, pH 8.6
Perma Kleer Di Crystals	Refined Products Corp.	Disodium salt of ethylene diamine tetra acetic acid	Sequestrant	Crystals	90%	Anionic	Non-hygroscopic crystals, pH 5
Permalene A-100 A-120 A-122 A-134	Refined Products Corp.	Fatty amide condensate fatty esters and salts of fatty alcohol sulfates	Detergent Emulsifier	Liquid	100%	Nonionic	Textile scouring and wetting agents of various compositions
Perma Par R	Refined Products Corp.	Substituted long chain secondary amine	Softener	Paste	22%	Cationic	Textile softening agent
Persol 40	Berkshire Color & Chemical Co.	Igepon type detergent	Detergent Emulsifier	Liquid	40%	Anionic	Acid and alkali stable; uses: general household and industrial cleaner
Petro AA AG	Petrochemicals Co.	Alkyl naphthalene sodium sulfonate	Detergent	Powder Liquid	98% 50%	Anionic	A hard surface detergent for metal cleaning, oil well acidizing, household cleaners, etc.
Petro P	Petrochemicals Co.	Alkyl naphthalene sodium sulfonate	Detergent Penetrant	Liquid, Solid	50% 98%	Anionic	A hard surface detergent; slightly higher foam power than "Petro AA"
Petrobase 1 2 3	Pennsylvania Refining Co.	Petroleum sulfonate base	Emulsifier	Liquid		Anionic	Compounded emulsifier for petroleum oils for a variety of applications, etc.
Petrobase 210	Pennsylvania Refining Co.		Emulsifier	Liquid		Anionic	All-purpose rust preventive base
Petromix CS	L. Sonneborn Sons, Inc.	Modified petroleum sulfonates containing auxiliary soaps	Emulsifier	Liquid		Anionic	Ready-made soluble oil bases for the preparation of emulsifiable cutting oils, emulsifiable solvent degreasers, etc.
Petronate CR HL L K	L. Sonneborn Sons, Inc.	A petroleum sulfonate	Wetting Emulsifier Dispersant	Liquid	62%	Anionic	A group of products differing in molecular weight; useful in cutting oils, rust preventives, leather oils, lube oil additives, dry cleaning soaps, textile oils, etc.
Petrosul 500 545 550 645 742 750 Neut. Ca Neut. Ba	Pennsylvania Refining Co.	Petroleum sulfonate	Emulsifier	Liquid	50% and 62%	Anionic	Oil-soluble, highly refined, for use as solubilizer and rust preventive; "Petrosul 545" is 50% active, rest 62%. "Petrosul 742" used for formulating dry cleaning compounds for textile specialties, etc.
Petrowet R	E. I. du Pont de Nemours & Co.	Saturated hydrocarbon sulfonate	Detergent Wetting	Liquid		Anionic	Wetting and penetrating agent in high concentration, electrolyte solutions; acidizing oil wells
Petrowet WN	E. I. du Pont de Nemours & Co.	Sodium alkyl sulfate	Wetting Emulsifier	Liquid		Anionic	For wetting and penetrating in acid solution

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Pex	Peck's Products Co.	A mixed alkyl aryl sulfonate and alkanolamide	Detergent	Liquid	30%	Anionic	An industrial cleaner
pHisoderm (3 types)	Winthrop Laboratories	Sulfonated ether, etc.	Detergent	Liquid		Anionic	Sudsing fluid cream; soap-replacement detergents for special medical and surgical purposes; hypo-allergenic
pHisoHex	Winthrop Laboratories	"pHisoderm" with hexachlorophene	Detergent Antibacterial				Antibacterial detergent; "pHisoHex" contains 3% hexachlorophene (total weight basis)
Phi-O-Sol WA	Onyx Oil & Chemical Co.	A sulfated ester of a fatty acid	Wetting Detergent	Liquid	45%	Anionic	A carboxylic acid ester sulfate; textile wetting agent, anti-foaming agent in printing industry; fat liquoring of leather
Pilot ABS-99	Pilot California Co.	Dodecyl benzene sulfonic acid	Detergent Intermediate	Liquid	99%	Anionic	High purity acid from SO_3 sulfonation of dodecyl benzene for production of all liquid and dry detergents
Pilot AL-40	Pilot California Co.	Ammonium alkyl aryl sulfonate in alcohol	Detergent Wetting	Liquid	40%	Anionic	Base for formulation of liquid dishwashing products
Pilot HD-90	Pilot California Co.	Alkyl aryl sulfonate	Detergent Wetting Emulsifier	Flake	92%	Anionic	High active sulfonate for dry and liquid formulas where low inorganic salt content is desired
Pilot SF-40	Pilot California Co.	Alkyl aryl sulfonate	Detergent Wetting Dispersant	Flake	41%	Anionic	Cold sulfonated high performance detergent either used alone or with builders
Pilot SP-60	Pilot California Co.	Alkyl aryl sulfonate	Detergent Wetting Emulsifier	Paste	56%	Anionic	High active paste of very low salt content for liquid and dry formulating
Pilot STS-30	Pilot California Co.	Sodium toluene sulfonate	Conditioner Solubilizer Wetting	Liquid	30%	Anionic	Low foamer and coupler
Pilot STS-90	Pilot California Co.	Sodium toluene sulfonate	Solubilizer Wetting	Flake	92%	Anionic	Hard surface cleaner, low foamer and coupler in formulas combining sulfonates and phosphates
Pilot SXS-90	Pilot California Co.	Sodium xylene sulfonate	Solubilizer Wetting	Flake	92%	Anionic	Hard surface cleaner, low foamer and coupler in formulas combining sulfonates and phosphates
Pilot TS-60	Pilot California Co.	Triethanolamine alkyl aryl sulfonate	Detergent Wetting	Liquid	60%	Anionic	Non-alcoholic base for neutral liquid dishwashing compounds, hair shampoos and hard surface cleaners
Planisol	Girdler Co.	Alkyl aryl sulfonate	Detergent Sanitizer	Powder		Anionic	Cleaning of tanks and vessels; metal degreasing and paint stripping; also sanitizing
Pluronic L44 L61 L62 L64 P75 F68	Wyandotte Chemicals Corp.	A condensate of ethylene oxide with a hydrophobic base formed by condensing propylene oxide with propylene glycol	Detergent Emulsifier Dispersant	Liquid Liquid Liquid Liquid Paste Flake	100%	Nonionic	The molecular weights of the various "Pluronics" are as follows: L61—2000, L44—2200, L62—2500, L64—2900, P75—4000, F68—8000. "P75" is a paste. Dishwashing and laundry compounds, dye leveling, textile soaping-off, etc., "Pluronic L61" is a defoaming agent for soaps and synthetics. "Pluronic F68" is used as a detergent additive, and for dispersing, dye leveling, boiler descaling, etc.
Polar-O	Carlisle Chemical Works, Inc.	A complex amine salt	Emulsifier Wetting	Liquid	100%	Cationic	Surface active agent with pronounced detergency
Polyethylene glycol esters of fatty acids	Glyco Products Co. C. P. Hall Kessler Chemical Co. Process Chemical Co. Union Carbide Chemicals Co. Universal Chemicals Co.	As in name	Emulsifier		100%	Nonionic	Not a trade name product, but given here for reference
Polykleen	Utility Chemical Co.	A compounded product	Detergent	Powder		Anionic	Dishwashing and general purpose cleaner

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Polymene G-24	Quaker Chemical Products Corp.	Fatty amide condensate	Detergent Emulsifier Lubricant	Liquid	98%	Nonionic	Textile, synthetic detergent, scouring, stock lubricant, wetting out, soap, auxiliary, fulling woolen piece goods
Polymulse C	Knapp Products, Inc.	Partially sulfated fatty acid esters	Dispersant Emulsifier	Paste	100%	Anionic	For use in cosmetic preparations such as depilatory creams, cold wave preparations, liquid cleansing creams, etc.
Polysperse 13	Knapp Products, Inc.	Polyhydric ether-esters	Emulsifier Dispersant	Paste	100%	Nonionic	An oil soluble emulsifier for cosmetic preparations, particularly lipsticks
Polyterge 102	Knapp Products, Inc.	A hydroxy polyamide of fatty acid condensate	Emulsifier	Liquid	100%	Anionic	A foam stabilizer and booster particularly suitable for hair shampoo formulations
Poly-Tergent B-200 B-300	Olin Mathieson Chemical Corp.	Aromatic polyglycol ether	Detergent Wetting Emulsifier	Liquid	100%	Nonionic	Hard surface detergent and emulsifier; "B-200" is slightly soluble in water, "B-300" is soluble
Poly-Tergent G-200 G-300	Olin Mathieson Chemical Corp.	Alkyl phenol polyglycol ether	Wetting Emulsifier	Liquid	100%	Nonionic	Foaming detergent and emulsifier, "G-200" and "G-300" are water insoluble
Poly-Tergent J-200 J-300 J-400 J-500	Olin Mathieson Chemical Corp.	Aliphatic polyoxyethylene ether alcohol	Wetting Dispersant Emulsifier	Liquid	100%	Nonionic	General wetting agent and dispersant; "J-200" is water dispersible, the others are all water soluble
Polytex 10	Knapp Products, Inc.	Polyamino glycol stearate	Emulsifier	Wax Flakes	100%	Nonionic	An emulsifier for cosmetic preparations such as cream shampoos, hair oils, deodorants, etc.
Prell (retail)	Procter & Gamble Co.		Detergent	Paste		Anionic	Hair shampoo
Prestabit Oil V	Antara Chemicals, a division of General Aniline & Film Corp.	Sulfated fatty acid	Emulsifier	Liquid	37%	Anionic	Acid and alkali stable sulfated oil used as a dyeing assistant for wool and cotton; clarifying agent in viscose manufacture
Product BCO	E. I. du Pont de Nemours & Co.	Cetyl betaine	Detergent	Liquid		Amphoteric	This product is amphoteric being cationic in acid and anionic in alkaline solutions. A textile agent for dye leveling, wool scouring, alkaline peroxide bleaching
Product BDO	E. I. du Pont de Nemours & Co.	Long chain betaine	Wetting	Liquid		Amphoteric	High solubility and surface activity in high concentration electrolyte solutions
Product QB	E. I. du Pont de Nemours & Co.	Quaternary ammonium salt	Wetting	Liquid		Cationic	Used in textile processing
Pro-Ex 6500 6501 6502 6503	Process Chemical Co.	Organic salts of an alkyl aryl sulfonate	Detergent	Liquid		Anionic	Concentrates for the liquid detergent industry; (Partial list of products only)
Proflex	Glyco Products Co.	A modified protein	Emulsifier	Powder	90-92%	Anionic	Insoluble in mineral oils, hydrocarbons, alcohol, kerosene; water dispersible; an emulsifier for water paints
Profoam 1002 1008	Process Chemical Co.	Compounded product	Detergent	Liquid		Anionic	Liquid detergent concentrates with high foaming properties for dishwashing ("Profoam 1002") and industrial ("Profoam 1008") use
Promeen 2000	Process Chemical Co.	Alkyl benzyl dimethyl ammonium chloride	Germicide	Solid Solid	100%	Cationic	A quaternary ammonium germicide and bactericide for dairies and food cleaning
Promide A-3540 SA-3860	Process Chemical Co.	Lauric diethanol amide	Emulsifier			Nonionic	A series of cosmetic grade products coded between A-3500 and A-3550 and super amides (SA) coded between 3610 and 3865; used as thickeners, foam stabilizers, emulsifiers and as solubilizing agents
Promul 5085 5252	Process Chemical Co.	Diethylene glycol monostearate (5085) and polyethylene glycol 400 monolaurate (5252)	Emulsifier	Liquid		Nonionic	A 5000 series of cosmetic emulsifiers corresponding to "Prosol" series E; products designed for industrial use
Promulgen	Robinson-Wagner Co.	A polyethylene glycol ether of a high molecular weight fatty alcohol	Emulsifier	Solid	100%	Nonionic	Used in cosmetic and pharmaceutical preparations

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Pronon 204,206 210,211	Process Chemicals Co.	Alkyl aryl polyether alcohol	Emulsifier	Liquid	100%	Nonionic	Ethylene oxide content is denoted in moles by the last number of the trade name. "Pronon 204" contains 4 moles. As ethylene oxide content increases water solubility of the emulsifier also increases
Propaste A, D, K, T	Process Chemicals Co.	Salts of lauryl sulfate	Detergent	Paste		Anionic	A series of various salts of lauryl sulfate; A-ammonium, D-diethanolamine, K-potassium, T-triethanolamine; General industrial cleaning (Partial list only)
Prosept 2300	Process Chemicals Co.	Alkyl benzyl dimethyl ammonium chloride	Bactericide Germicide	Solid		Cationic	A cosmetic grade germicidal product similar to "Promeen 2000"
Prosol A-1800 A-1815 A-1860 A-1910	Process Chemicals Co.	Coconut diethanolamide Modified coconut diethanolamide Lauric diethanolamide Ricinoleic diethanolamide	Emulsifier Wetting	Liquid	100%	Nonionic	Products are foaming agents, solubilizers and detergents. (Partial list only)
Prosol SA-3070 SA-3120 SA-3360	Process Chemicals Co.	Super alkylolamides	Wetting Emulsifier	Liquid	100%	Ampho-teric	Similar to "Prosol A" series except that they contain a higher percent of true fatty alkanolamide; "SA-3070" is an alkylol lauric super amide, "SA-3120" a coconut super amide, oil soluble, water dispersible emulsifier. "SA-3360" is the di-ethanolamine lauric superamide
Prosol E-4030 E-4080 E-4252 E-4299 E-4342 E-4390 E-4750	Process Chemicals Co.	Ethylene glycol monostearate Diethylene glycol monostearate Polyethylene glycol 400 monolaurate Polyethylene glycol 400 dioleate Polyethylene glycol 600 tall oil rosinate Polyethylene glycol 1000 monooleate Glycerol monostearate, high mono content	Emulsifier	Liquid and Solid	100%	Nonionic	General purpose emulsifiers for technical applications. (Partial list only)
Protean W	Protean Chemical Corp.	Sodium salt of hydrolized protein	Detergent Wetting	Liquid	50%	Anionic	A textile buffer, leveling agent, penetrant and bleaching assistant particularly useful in the processing of wool and worsteds
Protein K	Kalide Corp.	An animal protein solution	Wetting	Liquid		Nonionic	A textile leveling and protective agent in high alkalinity dye baths
Protenol KX	Continental Chemical Co.	Protein condensate	Detergent Emulsifier	Liquid	42%	Anionic	Textiles
Purasan AD DC	Gallowhur Chemical Co.	Alkyl dimethyl benzyl ammonium chloride	Germicide	Liquid	50%	Cationic	Used in sanitizing compounds in the dairy field, etc.
Purasan TM-50%	Gallowhur Chemical Co.	Dodecyl trimethyl ammonium chloride	Wetting Germicide	Liquid	50%	Cationic	Used in daily and food plant sanitation, laundry and restaurant use and in general sanitation where a cationic wetting agent is desired
Purex Detergent Slurry	Purex Corp.	Dodecylbenzene sodium sulfonate	Detergent	Paste	40%	Anionic	Industrial product
Pyrolene	Standard Chemical Products, Inc.	Sulfonated fatty amide condensation product	Detergent	Liquid	34%	Anionic	Textile scouring agent
Pyronate	L. Sonneborn Sons, Inc.	A petroleum sulfonate of molecular weight 340/360	Wetting Dispersant	Liquid	30% and 50%	Anionic	A water soluble product for use as dispersant and as wetting agent in aqueous media
Pyrotex	Standard Chemical Products, Inc.	Sulfonated fatty amide condensation product	Detergent Wetting	Liquid	34%	Anionic	Textile dyeing assistant
Pyrotex 121 330	Standard Chemical Products, Inc.	Sulfonated fatty amide condensation product	Detergent Detergent	Paste	30%	Anionic	Textile boil off assistant; "Pyrotex 330" is a 50% active concentration.
Quakester 437	Quaker Chemical Products Corp.	Complex glycol ester	Detergent Wetting	Liquid	100%	Nonionic	Industrial cleaners

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Quaternary C O S	Geigy Chemical Corp.	Quaternized amine C, O, S	Detergent	Liquid	100%	Cationic	Solvent soluble; ore flotation, asphalt wetting, detergent-sanitizers
Quat-O Brite	Britex Corp.	A quaternary ammonium chloride	Germicide	Liquid		Cationic	Sanitizing agent
Quatronyx	Onyx Oil & Chemical Co.	Alkyl dimethyl carboxy methyl ammonium chloride	Wetting Penetrant	Liquid	20%	Cationic	Stable in acid, alkali and high concentrations of salt; useful in electroplating
Regal	Armour & Co.	Alkyl aryl sodium sulfonate	Detergent Wetting	Bead	35%	Anionic	Textile, metal cleaning, compounding, fertilizer conditioning, household detergent, etc.
Regal HD	Armour & Co.	Alkyl aryl sodium sulfonate	Detergent	Bead	40%	Anionic	A dense bead for detergent compounding
Regal Liquid	Armour & Co.	A formulated product	Detergent	Liquid		Anionic	A light duty detergent for textile and hard surface cleaning
Renex 20 22 25 48	Atlas Powder Co.	Polyoxyethylene ester of mixed fatty and rosin acids	Detergent Wetting	Liquid	100%	Nonionic	For compounding cleaning preparations and for textile processing; "Renex 25" is "Renex" plus urea to form a free flowing powder; useful for compounding with alkalies; a detergent for cotton
Renex 30 31 36	Atlas Powder Co.	A polyoxyethylene tridecyl alcohol	Wetting Dispersant Detergent	Liquid	100%	Nonionic	As a scouring and dye leveling agent in textiles; a detergent ingredient in dairy cleaners, sanitizers, dishwashing compounds, etc.
Renex 35	Atlas Powder Co.	"Renex 30" plus urea	Detergent	Granular	50%	Nonionic	Recommended for the scouring of textile fibers and hard surfaces.
Renex 648 650 678 688 690 697 698	Atlas Powder Co.	Polyoxyethylene alkyl aryl ether	Detergent Wetting Emulsifier Dispersant	Liquid to Wax	100%	Nonionic	This is a series of compounds made to increase the mole ratio of ethylene oxide to alkyl phenol from about 5 to 30.
Resolin B	Sandoz, Inc.	Alkylnaphthalene sulfonate	Wetting	Paste		Anionic	Textile
Resolin N Conc.	Sandoz, Inc.	Dioctyl-sodium-sulfo-succinate	Wetting Rewetting	Liquid	75%	Anionic	Textile, paper, etc.
Rexan O	Dexter Chemical Corp.	A polyoxyethylated fatty alcohol	Dispersant Wetting	Liquid		Nonionic	A textile dye leveling and dispersing agent
Rexobase PW	Emkay Chemical Co.	Naphthenic derivatives	Emulsifier	Paste		Cationic	Emulsifiers for mineral oil and paraffin, respectively
Rexobase XX	Emkay Chemical Co.	Amide condensate	Emulsifier	Liquid		Anionic	Emulsifying agent
Rexopene	Emkay Chemical Co.	Sodium alkyl aryl sulfonate	Wetting Leveling	Liquid		Anionic	Penetrant; wetting agent; scouring assistant
Rexopon E	Emkay Chemical Co.	Modified amide amine condensate	Detergent	Liquid		Nonionic	Synthetic detergent
Rexopon V	Emkay Chemical Co.	Alkyl aryl sulfonate, sulfonated amide condensate	Detergent	Paste		Anionic	Scouring; synthetic detergent
Rexoscour	Emkay Chemical Co.	Blend of soaps, solvents, fatty acid amides, and adjusted and stabilized with mild alkalis	Detergent	Paste		Anionic	Detergent; kier boil assistant; fulling agent; desizing in continuous machines
Rexosolve —150	Emkay Chemical Co.	Emulsified blend of sulfonated oils, aliphatic high flash solvents and terpenes		Liquid		Anionic	Scouring assistant; oil and grease remover
Rexowet	Emkay Chemical Co.	Sulfonated isopropyloleate	Wetting	Liquid		Anionic	Wetting
Rexowet A	Emkay Chemical Co.	Sulfonated synthetic ester	Wetting	Paste		Anionic	Wetting agent; dye dispersant
Rexowet CR	Emkay Chemical Co.	Sulfonated isopropyloleate and soluble cresylic acid	Wetting	Liquid		Anionic	Cotton penetrant and wetting-out agent
Rexowet MS	Emkay Chemical Co.	Sodium alkylnaphthalene sulfonate	Penetrant	Liquid		Anionic	Low foaming penetrant for warp-sizing formulations
Rexowet RW	Emkay Chemical Co.	Highly sulfonated aliphatic mono- and di-esters	Wetting Rewetting Leveling	Gel		Anionic	Wetting agent; leveler; penetrant; enzyme activator
Rexowet GR	Emkay Chemical Co.	Sulfonated di-ester	Penetrant	Liquid		Anionic	Penetrant and wetting agent

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Rinfors S	Sandoz, Inc.	Emulsifiable solvents	Detergent	Liquid		Anionic	Textile, degreasing
Rinso Blue (retail)	Lever Brothers Co.		Detergent	Powder		Anionic	Built all-purpose detergent
RN-Water Softener A	Riches-Nelson Co.	An aromatic polyamino carboxylic acid salt	Sequestrant Dispersant	Liquid	50%	Anionic	Similar to "Nullapon" or "Sequestrene" in type and use
RN-200	Riches-Nelson Co.	Sodium alkyl aryl sulfonate	Wetting	Powder	75%	Anionic	Water spreader for fires, industrial cleaners, pickling baths
Roccal	Sterwin Chemicals, Inc. and Winthrop Laboratories	Alkyl dimethyl benzyl ammonium chloride	Germicide	Liquid	10%	Cationic	A quaternary ammonium salt; phenol coefficient against **staphylococcus aureus** at 37°-407, at 20°-279; germicide for surgical and medical purposes
Rueterg 97-S 57-M 40-U 40-T	Finetex, Inc.	Alkyl aryl sulfonate from "Neolene 400"	Detergent	Liquid	88%	Anionic	An emulsifier for pine oil, mineral oil, stoddard solvent, olive oil, etc. "Rueterg 57-M" is 42% active, "40-U" is 25% and "40-T" is 26%.
RWA 100 50	Roberts Chemicals, Inc.	Monobutylphenyl-phenol sodium monosulfonate $C_4H_9(SO_3Na)C_6H_3—C_6H_4(OH)$	Wetting	Powder	100%	Anionic	More polar solvent than series; uses: insecticides, embalming fluids; see also "Beaconol M"; "RWA-50" is 50% aqueous solution of "RWA-100"
RWA 300 240	Roberts Chemicals, Inc.	Monobutyl biphenyl sodium monosulfonate	Wetting	Powder	100%	Anionic	Less polar solvent than "RWA-100"; wetting properties best under alkaline conditions; uses: insecticidal sprays, etc. "RWA-240" is 40% aqueous solution of "RWA-300"
RWA 375	Roberts Chemicals, Inc.	Dibutylphenyl phenol sodium disulfonate	Wetting	Liquid	75%	Anionic	Water and polar solvent solubility good; principal use as a wetting agent in the application of rubber to fabric, and in all spray emulsions
S-100	Fine Laboratories, Inc.		Detergent	Liquid			Designed as a solubilizer for heavy duty liquid detergents. Valuable for solubilizing such inorganic salts as sodium tripolyphosphate, sodium metasilicate, etc.
Sandopan A	Sandoz, Inc.	Sulfated alcohols	Detergent	Paste		Anionic	Textile
Sandopan DTC	Sandoz, Inc.	Ethylene oxide condensate	Detergent Wetting	Gel		Anionic	Textile, paper, leather, household and industrial cleaning; stable in 10% caustic soda solution
Sandopan TFL	Sandoz, Inc.	Sulfonated amide	Dispersant	Liquid		Anionic	Dyeing assistant
Sandopan TN	Sandoz, Inc.	Modified ethylene oxide condensate	Detergent	Liquid		Anionic	Textile
Sandozin W	Sandoz, Inc.	Fatty ester	Softener	Paste		Nonionic	Durable effect with thermo-setting resins
Sandozol KB	Sandoz, Inc.	Sulfonated oil	Wetting	Liquid		Anionic	Textile
Sandozol N	Sandoz, Inc.	Sulfonated fatty ester	Wetting	Liquid		Anionic	Textile
Sanfodex M	Dexter Chemical Corp.	A sulfated oleic ester	Wetting	Liquid		Anionic	A dye leveling and sanforizing assistant
Sanforol 50	Standard Chemical Products, Inc.	Sulfonated ester	Wetting Rewetting	Liquid	60%	Anionic	Textile finishing agent
Santol S	Charlotte Chemical Laboratories, Inc.	Aryl sodium sulfonate	Wetting			Anionic	Textile
Santolube 203C	Monsanto Chemical Co.	Barium organic sulfonate	Detergent Dispersant	Liquid		Anionic	Oil soluble detergent; additive for industrial and motor oils
Santomerse #1	Monsanto Chemical Co.	Alkyl aryl sodium sulfonate	Detergent Wetting	Flake Granular Powder	40%	Anionic	General purpose product for use as is or in compounding
Santomerse 85	Monsanto Chemical Co.	Alkyl aryl sodium sulfonate	Detergent Wetting	Flake Powder	85%	Anionic	High active content product for compounding, emulsifying and other general purpose uses
Santomerse S	Monsanto Chemical Co.	Docylbenzene sodium sulfonate	Detergent Wetting Emulsifier	Liquid	30%	Anionic	Very low sodium sulfate content; useful as latex emulsifier and in applications where inorganic salts are undesirable

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Santomerse SX	Monsanto Chemical Co.	Alkyl aryl sodium sulfonate	Detergent Wetting Emulsifier	Liquid	30%	Anionic	Very low sodium sulfate content; useful as latex emulsifier and in application where inorganic salts are undesirable
Santomerse 3	Monsanto Chemical Co.	Alkyl aryl sodium sulfonate	Detergent Wetting Emulsifier	Paste	65%	Anionic	Higher active form of "Santomerse SX"
Santomerse E	Monsanto Chemical Co.	Alkyl aryl sodium sulfonate	Hydrotrope	Flake	70%	Anionic	Low foaming anionic; effective as hydrotrope for other surfactants
Sapamine FLK	Ciba Co.	Potassium salt of a complex organic acid	Softener	Paste		Anionic	Softening agent for textiles
Sapamine KWC	Ciba Co.	Quaternary ammonium compound	Softener Dispersant	Powder	99%	Cationic	Softening agent for textiles
Sapamine WL.	Ciba Co.	Amino condensate	Softener Detergent	Paste	33%	Cationic	Highly effective softening agent for all types of fibers
Sapamine OC	Ciba Co.	Tertiary ammonium compound	Softener Dispersant	Paste	22%	Cationic	Softening agent for textiles, especially synthetic fabrics
Saponate	L. Sonneborn Sons, Inc.	A petroleum sulfonate, molecular weight 375/400	Wetting	Liquid	62%	Anionic	Water soluble wetting and penetrating agent
Sarkosyl NL-100 NL-30 LC L S O	Geigy Chemical Corp.	Sodium lauroyl sarcosinate Sodium lauroyl sarcosinate Cocoyl sarcosine Lauroyl sarcosine Stearoyl sarcosine Oleyl sarcosine	Emulsifier	Powder Liquid	100% 30%	Anionic	Foam stabilizer, detergent, anti-corrosive agent, emulsifiers, anti-enzyme in toothpaste
Scherolene	Scher Bros.	Fatty ester	Dispersant Emulsifier	Liquid		Nonionic	Textile processing aid
Schercopal	Scher Bros.	Ethylene oxide derivative	Emulsifier Detergent	Liquid		Nonionic	Textile processing
Schercoterge	Scher Bros.	Sodium salt of sulfated fatty alcohol	Detergent Wetting	Paste		Anionic	Textile processing
Schercotex	Scher Bros.	Fatty amine condensate	Detergent Emulsifier	Liquid		Anionic	Textile processing
Scrubanol	Surfacto Co., Inc.	A built product	Detergent	Liquid	46%	Anionic	A floor cleaning concentrate for compounders; contains 46% organic detergent and 10% phosphates
SD 50	Laurel Soap Mfg. Co.	Alkyl aryl amine	Detergent Wetting	Liquid	50%	Anionic	Textile scour and wetting agent
SD 71	Laurel Soap Mfg. Co.	Sulfated ester	Wetting	Liquid		Anionic	Textile wetting
SD 200	Laurel Soap Mfg. Co.	Amine condensate	Wetting Detergent	Liquid	100%	Anionic	Textile scour and wetting
SD 75	Fine Organics, Inc.	Alkenyl dimethyl ethyl ammonium bromide	Algaecide	Liquid	75%	Cationic	For algae control; the alkenyl group is essentially 9-octadecenyl.
Sellogen Gel	Jacques Wolf & Co.	Methyl taurine condensate	Wetting	Gel	18%	Anionic	Universal detergent; stable to acids and alkalis
Sellogen Conc.	Jacques Wolf & Co.	Methyl taurine condensate	Wetting	Fluid	35%	Anionic	Universal detergent; stable to acids and alkalis
Sellogen HR	Jacques Wolf & Co.	Sodium dialkyl naphthalene sulphonate	Wetting	Powder	40%	Anionic	Dispersing agent for insecticides; wetting agent in acid and alkaline mediums
Sellogen O-141	Jacques Wolf & Co.	A mixture of anionic and nonionic products	Emulsifier	Paste	85%	Anionic	A textile scouring and wetting agent
Sellogen O-245	Jacques Wolf & Co.	Fatty acid amide condensate	Wetting	Liquid	100%	Nonionic	Textile scouring and dyeing
Sellogen P	Jacques Wolf & Co.	Sulfonated fatty alcohol	Wetting	Liquid	30%	Anionic	A textile scouring and wetting agent

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Seqol	Chas. Pfizer & Co.	Sugar fatty ester derivative	Emulsifier	Liquid	100%	Nonionic	In pre-pilot plant production
Sequestrene A 30A	Geigy Chemicals Division, Geigy Chemical Corp.	Tetra sodium ethylene diamine tetra-acetic acid	Chelating agent	Liquid	20% 30%	Nonionic	Broad spectrum complexing agent for polyvalent cations
Sequestrene AA	Geigy Chemicals Division, Geigy Chemical Corp.	Ethylene diamine tetraacetic acid	Chelating agent	Powder	100%	Anionic	A crystalline solid having a melting point of 200°C.; water soluble; may be neutralized to "Sequestrene A" or to the potassium or amine salts; fairly stable up to 200°C.
Sequestrene NA-2 NA-3 NA-4 ST	Geigy Chemicals Division, Geigy Chemical Corp.	Technical pure disodium ethylene diamine tetra acetate dihydrate	Chelating agent	Powder	100%	Anionic	Solubility: 10% in water at room temperature; "Sequestrene Na-2" is dihydrate of the disodium salt, "NA-3," monohydrate of the trisodium salt; "NA-4," the dihydrate of tetra sodium salt; "ST" is same as "NA-4" in 80% active powder form
Sequestrene Metal Complexes	Geigy Chemicals Division, Geigy Chemical Corp.	Metal salts of ethylene diamine tetra-acetic acid	Chelating agent	Solid		Anionic	Products are generally the disodium divalent metal salts of EDTA
Sequex 100	Scher Bros.	Tetra sodium salt of ethylene diamine tetraacetic acid	Sequestrant	Liquid		Anionic	Sequestering of Ca, Mg, and other metallic ions
Sequex 120	Scher Bros.	Trisodium hydroxyl ethylene diamine triacetic acid	Sequestrant	Liquid		Anionic	Sequestering of Ca, Mg, and other metallic ions
Sequex T	Scher Bros.	Modified tetra sodium salt	Sequestrant	Liquid		Anionic	Sequestering of Fe in caustic solution
Shampoo Base M	E. F. Drew & Co.	Modified coconut fatty acid amine condensate	Detergent	Liquid	100%	Anionic	A shampoo base
Shasta (retail)	Procter & Gamble Co.		Detergent	Paste		Anionic	Hair shampoo
Silver Dust (retail)	Lever Brothers Co.		Detergent	Powder		Anionic	Built all-purpose detergent
Sipex A K M TEA	American Alcolac Corp.	Ammonium salt of lauryl alcohol sulfate Potassium salt of lauryl alcohol sulfate Magnesium salt of lauryl alcohol sulfate Triethanolamine salt of lauryl alcohol sulfate	Detergent	Liquid Paste Liquid Liquid	30% 30% 30% 40%	Anionic	For use in rug shampoos, bar soaps, floor cleaners, as a dispersant for wax, textile soaping off and rug shampoos
Sipex CS TS	American Alcolac Corp.	Sodium salt of cetyl sulfate Sodium salt of tallow sulfate	Detergent	Paste Paste	26% 25%	Anionic	A general detergent and group of wetting compounds
Sipex S SB SD OP	American Alcolac Corp.	Sodium salt of lauryl alcohol sulfate	Detergent	Paste Liquid Powder Powder	30% 30% 94% 70%	Anionic	Rug cleaning, textiles, etc.
Sipex 7WC	American Alcolac Corp.	Modified alcohol sulfate	Detergent	Liquid	33%	Anionic	Bubble bath; very high foaming product
Sipon ES	American Alcolac Corp.	Sodium salt of lauryl ether sulfate	Detergent	Liquid	30%	Anionic	
Sipon LD	American Alcolac Corp.	Diethanolamine salt of lauryl alcohol sulfate	Detergent	Paste	40%	Anionic	
Sipon L-22	American Alcolac Corp.	Ammonium salt of lauryl alcohol sulfate	Detergent	Liquid	30%	Anionic	A shampoo and cosmetic base material
Sipon LS LS/B	American Alcolac Corp.	Sodium salt of lauryl alcohol sulfate Triethanolamine salt of lauryl alcohol sulfate	Detergent	Paste	30%	Anionic	A shampoo and cosmetic base material
Sipon LT/6	American Alcolac Corp.	Triethanolamine salt of lauryl alcohol sulfate	Detergent	Liquid	50%	Anionic	A shampoo and cosmetic base material
Sipon WD Crystals	American Alcolac Corp.	Sodium salt of lauryl sulfate	Foaming	Powder	99.5%	Anionic	Toothpaste
Siponate DS10	American Alcolac Corp.	Purified dodecylbenzene sodium sulfonate	Detergent	Powder	98%	Anionic	Used for liquid products, for emulsion polymerization where inorganic salts might interfere
Siponic E-1 2 3 4 5	American Alcolac Corp.	Tallow alcohol ethers	Detergent Softener	Paste	100%	Nonionic	As a base for heavy duty liquid household products, yarn softener, felt washing, etc.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Soapaline	Britex Corporation	An alkyl aryl sulfonate plus builders	Detergent	Powder		Anionic	A light duty household and industrial cleaner, dishes, etc.
Soaps—amine	Miscellaneous	As in name	Emulsifier Detergent			Anionic	Amine soaps used as emulsifiers include the following: mono-, di-, triethanolamine, isopropanolamine, morpholine, trigamine, trihydroxy methyl amino methane, 2 amino-2 ethyl-1,3 triethylene tetramine propanediol, etc.
Softener FG	Synthetic Chemicals, Inc.		Wetting	Paste			Textile softening agent and dispersant for starch, rosin, etc.
Solar Flake	Swift & Co.	Alkyl aryl sulfonate	Detergent	Flake	40%	Anionic	General detergent uses
Solar Neutral	Swift & Co.	Alkyl aryl sulfonate (modified)	Detergent	Granule		Anionic	A mild neutral detergent for general use lightly built with phosphates
Solar Heavy Duty	Swift & Co.	A blend	Detergent	Granule		Anionic	A built detergent for all heavy duty uses including washing of cotton fabrics
Solar Liquid "Regular"	Swift & Co.	Coconut oil fatty acid amine condensate (modified with oleic acid)	Detergent Thickener	Liquid	100%	Nonionic	Textiles, base for floor cleaners, metal cleaning
Solar "25" Liquid	Swift & Co.	Coconut oil fatty acid amine condensate (modified with an amine sulfonate)	Detergent	Liquid	100%	Anionic	Textiles, base for high foaming liquid detergents, dedusting granulated detergents
Solar "CO" Liquid	Swift & Co.	Coconut oil fatty acid amine condensate	Detergent	Liquid	100%	Nonionic	High purity, light color
Solar "NP" Liquid	Swift & Co.	A nonyl phenol ethylene oxide condensate	Detergent Emulsifier	Liquid	100%	Nonionic	Textiles, wool scouring, liquid surface cleaners, emulsifier for agricultural chemicals
Solaset	Aceto Chemical Co.	Sodium lauryl ether sulfate	Detergent	Liquid	30%	Anionic	A shampoo base material
Solasol U.S.P.	Aceto Chemical Co.	Sodium lauryl sulfate	Detergent	Powder		Anionic	U.S.P. grade material
Needles		Sodium lauryl sulfate		Needles	88%	Anionic	A non-dusting detergent emulsifier
FFA		Sodium lauryl sulfate free of fatty acids	Detergent	Liquid	60%	Anionic	For use in toothpaste
Sole-fonate 97	Sole Chemical Corp.	Dodecyl benzene sodium sulfonate	Detergent	Flake	92%	Anionic	High active-low salt detergent for high percentage detergent solutions
98	Sole Chemical Corp.	Dodecyl benzene sulfonic acid	Detergent Base	Liquid	98%	Anionic	High active-low salt producing detergent base
Sole-mulse B	Sole Chemical Corp.	Modified ethylene oxide condensates	Emulsifier	Liquid	100%	Anionic	Emulsifier , for emulsion degreasers, industrial cleaners
Sole-mulse E-75	Sole Chemical Corp.	Alkyl phenol condensation derivative	Wetting Penetrant	Liquid	75%	Nonionic	Acid-alkali stable wetter and penetrant
Sole-mulse OW-2	Sole Chemical Corp.	Modified alkyl phenol condensation derivative	De-emulsifier	Liquid	100%	Nonionic	Oil well de-emulsifier base
Sole-mulse PD-1 PD-2	Sole Chemical Corp.	Modified dodecyl benzene sulfonate	Emulsifier	Liquid	100%	Anionic	Emulsifier for special phosphatizer-degreaser concentrates containing H_3PO_4 and solvents
Sole-onic CDS	Sole Chemical Corp.	Diglycol laurate	Emulsifier Defoamer	Liquid	100%	Anionic	Self-emulsifying oil soluble emulsifier and defoamer for paints, industrial oils, processing
Sole-onic CH-50	Sole Chemical Corp.	Sugar derivative	Chelating agent	Liquid	50%	Nonionic	Chelating agent for Fe, Cu, Al, Ca, Mg. Primarily in high pH application
Sole-onic CMG	Sole Chemical Corp.	Vegetable monodiglyceride	Emulsifier	Paste	100%	Nonionic	Plastic vegetable monodiglyceride
Sole-onic MI	Sole Chemical Corp.	Isopropyl myristate	Wetting and Spreader	Liquid	100%	Nonionic	Oil soluble, non-greasy topical carrier and spreading agent for cosmetic and pharmaceutical oils
PI		Isopropyl palmitate					
Sole-onic PGE PGO	Sole Chemical Corp.	Fatty glyceride esters	Emulsifier Anti-foamer Corrosion Inhibitor	Liquid	100%	Nonionic	Anti-foamer for sugar systems, emulsifier for oils, anti-corrosion for water containing aerosol formulations
Sole-terge NE-10	Sole Chemical Corp.	10 mol ethylene oxide nonyl phenol adduct	Emulsifier Degreaser	Liquid	100%	Nonionic	All purpose detergent-emulsifier base for industrial and household formulations
Soliol Base H-60 N-60	Chas. T. Fass, Inc.	Petroleum sodium sulfonate	Detergent Wetting Emulsifier	Liquid	63%	Anionic	A rust proofing agent and detergent for petroleum oils

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Soluble Base 11 600	Carlisle Chemical Works	An alkyl sodium sulfonate plus emulsifiers	Emulsifier	Liquid	92%	Anionic	An oil in water emulsifier for preparing soluble oils; moderately soluble in water, very soluble in benzene, mineral oil, alcohol; soluble "Base 600" same only designed for use with kerosene emulsions; textile scouring oils
Soluble Oil J	L. Sonneborn Sons, Inc.	A blend of petroleum sulfonates	Emulsifier	Liquid		Anionic	A rust inhibitor designed for use with alcohol, radiator anti-freeze mixtures
Soluble Oil Base 13-W	Carlisle Chemical Works	An oil soluble petroleum sulfonate	Emulsifier	Liquid		Anionic	Used for making transparent soluble oils for machining and cutting
Solulan-97 -98	American Cholesterol Products, Inc.	Acetylated polyoxyethylene derivatives of lanolin	Emulsifier	Liquid	100%	Nonionic	Pharmaceutical and cosmetic preparations
Solvadine G	Ciba Co.	Alkyl aryl sodium sulfonate	Detergent Dispersant Emulsifier Wetting	Flake		Anionic	General purpose anionic surfactant with excellent detergent, wetting and emulsifying qualities; stable and effective in hard water and with acids and alkalies
Solvadine S	Ciba Co.		Detergent	Liquid		Anionic	A spotting agent for the dry cleaning field
Solventol	Burkart-Schier Chemical Co.	Solubilized solvent compound	Detergent	Liquid	90%	Anionic	General textile scouring and detergency; tar and oil stain remover
Solvex # 50 100	Berkshire Color and Chem. Co.	A pine solvent detergent	Detergent	Liquid	40%	Anionic	Textile scouring; "Solvex #100" is a cresylic acid solution of a detergent
Sonolene 500 NF	L. Sonneborn Sons, Inc.	Built alkyl aryl sodium sulfonate	Detergent	Paste	25%	Anionic	A textile detergent for general use
Sorapon SF-73	Antara Chemicals, a division of General Aniline & Film Corp.	Sodium alkyl aryl sulfonate	Detergent Wetting Dispersant	Beads	35%	Anionic	Stable to acid, alkali and hard water; household and industrial use
Sorapon SF-78	Antara Chemicals, a division of General Aniline & Film Corp.	Sodium alkyl aryl sulfonate	Detergent Wetting Dispersant Emulsifier	Flake	85%	Anionic	Used in textile processing as a detergent, dyeing and bleaching assistant, and lime soap dispersant; detergent base for industrial cleaning compounds
Sorbinol	Burkart-Schier Chemical Co.	Modified amine fatty condensate	Rewetting	Liquid	92%	Nonionic	Finishing and rewetting agent in the textile trade; has some cationic properties
Sorbit AC P	Geigy Chemicals Division, Geigy Chemical Corp.	Mono and dibutyl naphthalene sodium sulfonate	Wetting	Paste	65%	Anionic	Highly soluble in water and alkalis; recommended for heavy duty metal cleaners and also as a solubilizing agent and coupling agent for liquid detergents; "Sorbit P" same as "Sorbit AC" only in powdered form, 75% active; a 93% powder is also available
Sorolene G	Onyx Oil & Chemical Co.	Alkyl naphthalene sodium sulfonate	Wetting Dispersant	Paste	28%	Anionic	A textile dye assistant and for use in industrial cleaning compounds
Soromine AL	Antara Chemicals, a division of General Aniline & Film Corp.	Complex fatty amido compound	Softener Lubricant	Paste	27%		Amphoteric; improves hand and sewability of fabrics
Soromine AT	Antara Chemicals, a division of General Aniline & Film Corp.	Complex fatty amido compound	Softener	Paste	20%	Amphoteric	Functions as a cationic softening agent in acid liquors and a nonionic and/or anionic softener in neutral or alkaline liquors; base ingredient for household and commercial laundry softener
Soromine BNS	Antara Chemicals, a division of General Aniline & Film Corp.	Fatty acid amide complex	Softener	Paste	35%	Cationic	Softening agent for cellulosic and animal fibers; dye fixing agent
Soromine BSA	Antara Chemicals, a division of General Aniline & Film Corp.	Alkyl biguanidine	Softener	Paste	73%	Cationic	Highly substantive softener for cellulosic fibers; antistatic agent for synthetic fibers
Soromine CS	Antara Chemicals, a division of General Aniline & Film Corp.	Fatty amido compound	Softener	Paste	35%	Cationic	Softening agent for cellulosic and animal fibers; dye fixing agent
Soromine FW	Antara Chemicals, a division of General Aniline & Film Corp.	Sodium salt of a fatty amide complex	Softener Lubricant	Paste		Anionic	A cellulosic fiber softener

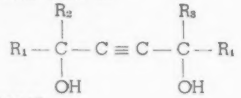
Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Sotex N NC CW 3CW C CX	Synthetic Chemicals, Inc.	Long chain fatty acid esters containing multiple ether linkages	Dispersant Emulsifier	Liquid			A dispersant for paints, etc.; modified types are designated "Sotex-C," "-CW" and "-NC," etc. "Sotex N" is useful in quick enamels; "Sotex 3CW" is a W/O emulsifier; "Sotex NC" is useful as a pigment disperser in nitrocellulose plasticizers
Span 20	Atlas Powder Co.	Sorbitan monolaurate	Emulsifier	Liquid	100%	Nonionic	General emulsifier—antifoaming agent
Span 40	Atlas Powder Co.	Sorbitan monopalmitate	Emulsifier	Solid	100%	Nonionic	General emulsifier
Span 60	Atlas Powder Co.	Sorbitan monostearate	Emulsifier	Solid	100%	Nonionic	General emulsifier (large application in foods)
Span 65	Atlas Powder Co.	Sorbitan tristearate	Emulsifier	Solid	100%	Nonionic	General emulsifier
Span 80	Atlas Powder Co.	Sorbitan monooleate	Emulsifier	Liquid	100%	Nonionic	General emulsifier; forms W/O emulsions
Span 85	Atlas Powder Co.	Sorbitan trioleate	Emulsifier	Liquid	100%	Nonionic	General emulsifier
Spec-Tak	Diversey Corp.	Compounded product	Detergent	Granule		Anionic	Machine bottle washing compound, probably containing a sequestrant such as sodium gluconate
Spotter M	Dixo Co.	A formulated product	Detergent	Liquid		Nonionic	Used as a pre-spotting agent in the drycleaning industry
Sprex AC	DuBois Co.	Alkyl aryl sodium sulfonate modified with a nonionic	Detergent	Powder		Anionic	A general detergent for use in the food industry
SS-96	James Varley & Sons, Inc.		Detergent	Liquid			An all-purpose cleaner for use in private brand formulations
Stablex A	Heveatex Corp.	Naphthalene sodium alkyl sulfonate	Wetting	Powder	100%	Anionic	Latex stabilizing and compounding agent
Stablex B	Heveatex Corp.	Sodium naphthalene sulfonate	Dispersant	Powder	100%	Anionic	Dispersing agent
Stablex G	Heveatex Corp.	Petroleum sodium sulfonate	Wetting	Powder	100%	Anionic	Latex stabilizer
Standapol	Standard Chemical Products, Inc.	Sulfonated vegetable oils	Emulsifier Lubricant	Liquid		Anionic	A textile lubricant and softener
Stansamine	Standard Soap Co., division of Concord Chemical Co.	Fatty alkylolamine condensate	Detergent Wetting	Liquid		Nonionic	Detergent, wetting, thickener, lubricant
Stanso Tex Oil	Standard Soap Co., division of Concord Chemical Co.	Sulfated glyceride	Softener Wetting	Liquid		Anionic	General purpose textile assistant
Staneosine B B-10 M-10	Standard Chemical Products, Inc.	A fatty amine condensate	Softener	Paste	40%	Anionic	"Staneosine B-10" and "M-10" are 45% active substituted fatty alkanolamides. Uses: textile softening agents
Stantex 322	Standard Chemical Products, Inc.	Sulfated fatty ester	Wetting Dispersant	Liquid	65%	Anionic	Textile dyeing assistant, etc.
Sted	Cowles Chemical Co.	A built compound	Detergent	Powder		Nonionic	A built low sudsing detergent for commercial laundry use, sold to distributors only
Stepan DS-60	Stepan Chemical Co.	De-salted sodium dodecyl benzene sulfonate			50%	Anionic	Liquid formulation where low salt content gives clarity and low cloud point, coupler
Stepan Con. #1353	Stepan Chemical Co.	A compound product of sulfated vegetable oils, liquid petroleum and water	Emulsifier	Liquid		Anionic	A base material for non-lathering oil shampoos, skin cleansers, etc.
Stepan HDA-7	Stepan Chemical Co.	Fatty acid alkylolamide	Detergent	Liquid	100%	Nonionic	Developed for used in compounding high phosphate content liquid hard surface cleaners
Stepan LD 99 LD 55A LD 44 LD-88	Stepan Chemical Co.	Formulated hard surface cleaner	Detergent	Liquid	60% 39% 40% 40%	Anionic	Products are designed as built liquid detergent bases for formulations
Stepan LDA	Stepan Chemical Co.	An alkylolamide	Detergent	Liquid	100%	Nonionic	A foam stabilizing agent for use in alkyl aryl and alcohol sulfate detergents
Stepan LIPA	Stepan Chemical Co.	A fatty acid alkanolamide	Detergent	Liquid Solid	100%	Nonionic	Used as a foam stabilizer for alkyl aryl sulfonates and alcohol sulfate detergent compositions

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Stepan RB-98	Stepan Chemical Co.	A formulated liquid detergent for industrial use	Detergent	Liquid		Anionic	For use as an industrial cleaner for dishwashing, car shampoos, bubble baths, auxiliary emulsifier in scrub soaps, etc.
Stepan P-616 P-621 P-650	Stepan Chemical Co.	High purity alkylolamides		Solid Gel Liquid	100%	Nonionic	Foam stabilizers and thickeners
Stepan T-6-A T-6-B S.86 ADT	Stepan Chemical Co.	Coconut fatty acid alkanolamides	Detergent	Liquid	100%	Nonionic	"Stepan T-6-A" is a thickening agent and foam stabilizer for use in shampoos; "Stepan T-6-B" has greater thickening but less detergency power; "Stepan S-86" is a textile scouring agent for use above pH 6.0; "Stepan ADT" is an industrial thickening agent for floor cleaners, etc.
Stepanate X T	Stepan Chemical Co.	Sodium xylene sulfonate Sodium toluene sulfonate	Hydrotrope	Liquid	40%	Anionic	Solubilizers and coupling agents
Stepanol AM Mg ST	Stepan Chemical Co.	Salts of alcohol sulfates	Detergent	Liquid	30% 30% 40%	Anionic	"Stepanol AM" is the ammonium salt; "Mg" the magnesium, and "ST" the triethanolamine salt
Stepanol B-153	Stepan Chemical Co.	An ammonium alkyl phenoxy polyoxyethylene sulfate	Detergent	Liquid	57-60%	Anionic	Dishwashing, car wash; product has high, stable foam
Stepanol DEA	Stepan Chemical Co.	Diethanolamine lauryl sulfate	Detergent	Liquid	35%	Anionic	Clear and creme shampoos
Stepanol ME Dry ME Dry AW	Stepan Chemical Co.	Sodium lauryl sulfate	Detergent	Solid	90-94%	Anionic	These are highly purified compounds for cosmetics and other uses
Stepanol TBK	Stepan Chemical Co.	Alkoxy polyoxyethylene ethanol	Detergent	Liquid	100%	Nonionic	Liquid dishwashing
Stepanol SXR	Stepan Chemical Co.	Fatty acid polyoxyethylene ethanol	Softener Lubricant Emulsifier	Paste	100%	Nonionic	
Stepanol WA Paste WA Special WAQ WAT	Stepan Chemical Co.	Sodium lauryl sulfate WAT is the triethanolamine salt	Detergent	Liquid	28-30%	Anionic	"WA Paste" its a general type detergent. "WA Special" has low salt content. "WAQ" is similar to "WA Paste" but in liquid form for use in shampoos. "WAT" is the triethanolamine salt for clear shampoos
Sterox AJ AJ-100	Monsanto Chemical Co.	Polyoxyethylene ether	Detergent	Liquid	85% 100%	Nonionic	High wetting and detergency properties; used generally in household and industrial products, "AJ-100" is 100% active form
Sterox AWS	Monsanto Chemical Co.	A built compound	Detergent	Powder		Nonionic	A low foaming product designed for industrial detergent use
Sterox CD	Monsanto Chemical Co.	Polyoxyethylene ester	Detergent	Liquid	100%	Nonionic	Low foaming nonionic used primarily in built products for automatic washers and in applications where low foam is desired
Sterox SK	Monsanto Chemical Co.	Polyoxyethylene thioether	Emulsifier Detergent	Liquid	100%	Nonionic	Emulsifier for insecticides mineral solvents, etc., excellent for scouring greasy soils in textile operations
Sterox 6	Monsanto Chemical Co.	Polyoxyethylene thioether	Emulsifier Detergent	Liquid	85%	Nonionic	Same as "Sterox SK," but with lower active content
Strodex N-50 D Pdr.	Dexter Chemical Co.	Potassium and sodium salts of sulfated amide products of straight chain acids of the general formula: $R\text{-}CON\text{-}R_1\text{—}OSO_3Na$ • R and R_1 vary from C_2 to C_{18}	Detergent	Liquid Solid Paste		Anionic	These stable products are useful in all detergent and wetting operations in the textile field
STS-30	Pilot Chemical Co.	Sodium toluene sulfonate	Solubilizer	Liquid	30%	Anionic	Useful as a solubilizer, etc., for liquid detergents, etc.
Sucrodet D-600 B-600	Berkeley Chemical Corp.	Sucrose dipalmitate	Emulsifier	Solid	100%	Nonionic	"D-600" is sucrose dipalmitate. "B-600" is 70% monoester and 30% diester of sucrose palmitate. Emulsifiers for shortening, cosmetics, etc.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Sudso	Britex Corp.	An alkyl aryl sulfonate plus builders	Detergent	Granular		Anionic	Low foaming detergent for automatic laundering
Sulfanole ANO S Gel. Conc.	Warwick Chemical Co., division, Sun Chemical Corp.	A fatty amine condensate	Detergent Emulsifier	Liquid	100%	Anionic	Textiles
Sulfanole ANC	Warwick Chemical Co., division, Sun Chemical Corp.	Fatty amine condensate	Detergent Wetting Foamer	Liquid	30%	Nonionic	Low cost form of amine condensate
Sulfanole CP	Warwick Chemical Co., division, Sun Chemical Corp.	Fatty amide sulfate	Detergent	Paste	25%	Anionic	Textile, as a dye leveling agent, in kier boiling of cotton, scouring and fulling of woolens, etc.
Sulfanole FAF	Warwick Chemical Co., division, Sun Chemical Corp.	Sodium salt of an alcohol sulfate	Detergent	Liquid	30%	Anionic	Rug and upholstery cleaners; cream and paste shampoos
Sulfanole FAR • FAA	Warwick Chemical Co., division, Sun Chemical Corp.	Triethanolamine salt of lauryl sulfate	Detergent	Liquid	35%	Anionic	A liquid detergent for shampoo and other uses; "Sulfanole FAA" is the same in 60% concentration.
Sulfanole KA	Warwick Chemical Co., division, Sun Chemical Corp.	Alkyl aryl amine sulfonate	Detergent Wetting	Liquid	60%	Anionic	Used as industrial and domestic cleaner
Sulfanole LAN	Warwick Chemical Co., division, Sun Chemical Corp.	Lauryl alkylol amide condensate	Detergent Wetting	Liquid	100%	Nonionic	High purity amine condensate of good color, especially useful for cosmetic applications
Sulfanole NPE	Warwick Chemical Co., division, Sun Chemical Corp.	Alkyl polyglycol ether	Dispersant Wetting	Paste	100%	Nonionic	Efficient wetting agent
Sulfanole S Powder	Warwick Chemical Co., division, Sun Chemical Corp.	Sulfonated fatty amide	Detergent Foamer	Powder	28%	Anionic	Detergent, resistant to hard water; useful for washing in sea water
Sulfanole S Slurry Conc.	Warwick Chemical Co., division, Sun Chemical Corp.	Sulfonated fatty amide	Detergent Foamer	Liquid	50%	Anionic	Textiles
Sulfanole No-9 Anhydrous No-93	Warwick Chemical Co., division, Sun Chemical Corp.	Alkyl phenoxy polyoxyethylene ethanol	Detergent Emulsifier Wetting	Liquid	100% 30%	Nonionic	General purpose surface active agent resistant to acids, alkalis, and other electrolytes; "Sulfanole No-93" is a 30% concentration of "Sulfanole No-9 Anhydrous."
Sulfanone A	Hart Products Corp.	A mixture containing a sulfated alkyl phenol	Detergent	Liquid	30%	Anionic	A textile scouring agent, particularly designed for synthetic fibers
Sulfatate B1	Glyco Products Co.	Alkyl aryl sodium sulfonate	Wetting Penetrant	Liquid	35%	Anionic	Water soluble; non-toxic; textiles, paper, leather, cosmetics
Sulfocolaurate	Emulsol Corp.	Lauric acid ester of the potassium salt of sulfoacetic acid amidified with β-amino ethyl alcohol	Detergent Foamer	Powder	91%	Anionic	A foaming agent for use in dentifrices
Sulfol 448	E. F. Houghton & Co.	Nonionic stock lubricant	Lubricant	Liquid	100%	Nonionic	Textile
Sul-Fon-Ate AA9 AA10	Tennessee Corp.	Dodecylbenzene sodium sulfonate	Wetting Detergent	Powder	90% 96%	Anionic	
Sul-Fon-Ate BL	Tennessee Corp.	Sulfonated aliphatic hydrocarbon	Detergent	Liquid		Anionic	Textile mercerizing operation, kier boiling, vat dyeing, etc.
Sul-Fon-Ate-OA-5	Tennessee Corp.	Sulfonated oleic acid	Emulsifier Wetting	Liquid		Anionic	Textile, as a wool carbonizer, in metal cleaning, etc.
Sulfonate OS	Sun Oil Co.	Sodium salt of a sulfonated oil soluble petroleum distillate	Dispersant Emulsifier	Liquid	60%	Anionic	Rust inhibitor, and emulsifier and sludge dispersant for cutting oils, insecticide formulations, fuel oil additives, flotation agent, etc.
Sulfonate S-40	Sinclair Chemicals, Inc.	A sodium mahogany sulfate M.W. 461	Emulsifier	Liquid	40%	Anionic	For preparing soluble cutting oils
Sul-Fon-Ates X35-L X50-L X60-L	Tennessee Corp.	Mixed salts of alkyl aryl sulfonic acid	Detergent	Liquid	35% 50% 60%	Anionic	General industrial detergents, "X-35L" is the sodium salt; "X-50L" is mixed sodium and triethanolamine salts, and "X-60L" is the mixed ammonium and triethanolamine salts.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Sulfonates-Petroleum	Bryton Chemical Corp. Esso Standard Oil Co. Mineral Oil Refining Co. Petrolite Corp. Shell Oil Co. Sherwood Refining Co. Sinclair Refining Co. Socony-Mobil Oil Co. Standard Oil Co. of Indiana Toms River-Cincinnati Chemical Corp.	As in name	Emulsifier	Liquid		Anionic	These products include acid and oil layer petroleum sulfonates and their Ca, Ba and other salts used as emulsifiers in the petroleum industry as emulsion breakers, oil additives, etc. Frequently the producing company has a captive use for their entire production. See also other companies who produce similar type products under trade names, such as "Hyponate L-50," "Petrobase 1," "Saponate," "Soliol Base H-60," "Soluble Oil Base 13-W," etc.
Sulfonates of Vegetable and Animal Oils	Bryant Chemical Corp. Chaffardon, J. Deecy Products Co. Farrington, W.U. Estate of Greenwood Textile Supply Co. Industrial Products, Inc. Marden Wild Corp. Marlowe Van Loan Corp. Ottol Oil Co. Ritter Chemical Co. Salem Oil & Grease Co. Scholler Bros. Siddall Co. Soluol Chemical Co. Southern Sizing Co. Trask, Arthur C., Co. White & Hodges, Inc. Whittemore Wright Co. Zurn, O.F., Co. Fiber Chemical Corp. Leatex Chemical Co.	As in name	Emulsifier	Liquid and Paste		Anionic	These products consist of sulfonated red oil, sperm oil, coconut oil, peanut oil, soybean, cod oil, herring oil, castor oil, tall oil, linseed oil, etc., and are generally sold under their generic chemical name such as "75% sulfonated castor oil," etc. A partial list of companies making some or a number of such products is listed here. See also other companies which make similar products under trade names and listed here separately, such as "Ahcowet 129," "Celopon," "Chemoil 412," "Cordon 810," "Emkafol OT," "Nopco 1408," etc.
Sulfonic Acid	Jacques Wolf & Co.	Alkyl aryl sulfonate	Detergent Wetting	Paste	85%	Anionic	Used for compounding detergents
Sulfopon F	Fallek Products Co.	Fatty alcohol sodium sulfate with phosphates	Detergent	Powder	45%	Anionic	Basic material for fine washing (rinsing) preparations
Sulfopon F 35	Fallek Products Co.	Compound of synthetic active substances	Detergent	Powder	35%	Anionic	For fine washing and rinsing preparations
Sulfopon 450 O OK	Fallek Products Co.	Fatty alcohol sodium sulfate	Detergent	Paste	45%	Anionic	Heavy duty detergents, cleansing agents; "Sulfopon O" is 28% active; "OK," 35% active
Sulfopon K	Fallek Products Co.	Lauryl sodium sulfate	Detergent	Paste	35%	Anionic	Light and heavy duty detergents, rinsing agents
Sulfopon WA-1 WA-3	Fallek Products Co.	Sodium lauryl sulfate	Detergent	Paste	28% 29%	Anionic	Products designed for cream shampoos
Sulframin AB 40 AB Conc. AB 40 Beads AB Slurry	Ultra Chemical Works, Inc.	Dodecyl benzene sulfonate	Detergent	Flake & Powder Powder Bead Paste	39-41% 80-85% 39-41% 45-47%	Anionic	Detergent, base for household, industrial, and dairy cleaning compounds, textile scouring agent; the "AB Conc." is 85% active
Sulframin ABW	Ultra Chemical Works, Inc.	Dodecyl benzene sulfonate plus alkyl amide sulfates	Detergent Wetting	Powder	25%	Anionic	Textile scouring agent miscellaneous household cleaners
Sulframin DHL Conc.	Ultra Chemical Works, Inc.	Sodium salt of an alkyl amide sulfate	Detergent Wetting	Liquid	31%	Anionic	Textile scouring and dye assistant
Sulframin DR	Ultra Chemical Works, Inc.	Sodium salt of a hydroxy alkyl amido alcohol sulfate	Detergent Penetrant	Liquid	25%	Anionic	Textile dye dispersant, shampoo

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Sulframin DT	Ultra Chemical Works, Inc.	Sodium salt of an alkyl amido sulfate	Detergent	Powder	14%	Anionic	Industrial, textile and household cleaners; not stable to strong alkali or acids; also available in more concentrated forms
Sulframin E	Ultra Chemical Works, Inc.	Modified alkyl aryl sulfonate	Detergent	Liquid	25%	Anionic	Lower, but more stable foam, than straight alkyl aryl
Sulframin KE	Ultra Chemical Works, Inc.	Alkyl aryl sulfonate (decyl benzene)	Detergent	Liquid	25%	Anionic	High foaming and detergent properties; excellent for liquid blending
Sulframin HD Beads	Ultra Chemical Works, Inc.	Alkyl aryl sulfonate	Detergent	Bead	30%	Anionic	Household detergent, general purpose cleaning
Sulframin LW	Ultra Chemical Works, Inc.	Sodium salt of a lauryl amino sulfate	Detergent	Powder	17%	Anionic	Textiles, household cleaners
Sulframin N	Ultra Chemical Works, Inc.	Sodium salt of a dialkylnaphthalene sulfonic acid	Wetting	Paste	55%	Anionic	Low foaming, acid and alkali stable; textiles, for wool carbonizing and mercerizing cotton
Sulframin Sulfonic acid	Ultra Chemical Works, Inc.	Dodecyl benzene sulfonic acid	Intermediate	Slurry	84%		Detergent base; for compounding
Sulphol	Kehew-Bradley Co.	Sulfonated cod oil	Softener	Liquid		Anionic	Leather softener
Sulphol "A"	Kehew-Bradley Co.	Sulfonated cod and animal fats	Softener	Liquid		Anionic	Leather softener
Superamides L9 GC GR	Onyx Oil & Chemical Co.	High purity fatty acid alkanolamides	Detergent Wetting Emulsifier	Solid Liquid Liquid	80-95%	Nonionic	Virtually free of alkanolamine and soap; contains 80-95% of pure alkanolamide; "GC" and "GR" are liquids
Supersulphate FS	Laurel Soap Mfg. Co.	Alkyl aryl sulphonate	Detergent Wetting	Powder		Anionic	Textile detergent and wetting agent
Supronyx	Onyx Oil & Chemical Co.	Modified sodium alkyl sulfate	Detergent Wetting	Liquid	21%	Anionic	Textile scouring and dyeing, industrial cleaners
Surco 40	Surfacto Co.	A built product	Detergent	Liquid	37%	Anionic	A compounded dishwashing product
Surf (retail)	Lever Brothers Co.	Sodium alkyl aryl sulfonate plus builders	Detergent	Powder		Anionic	All-purpose heavy-duty detergent
Surface Active Agent BPE TR	American Cyanamid Co.	Bis(p-tert-butyl phenoxyethyl) sodium sulfosuccinate	Wetting	Solid	100%	Anionic	Ink and pigment dispersant; wetting out agent for textiles; paper absorbency aid; antifogging agent; miscellaneous emulsifying applications
Surfactant SE957	Chas. Pfizer & Co.	A sugar fatty ester derivative	Emulsifier	Powder	80%	Nonionic	In pre-pilot plant production; a product designed for industrial use
Surfacto "MA" "60"	Surfacto Co.	Modified coconut alkanolamide condensate	Detergent	Liquid	96%	Nonionic	Soluble in water in all proportions; useful in formulating cleaners of all types with or without other detergent materials
Surfax 505 532	E. F. Houghton & Co.	Fatty ester	Emulsifier Wetting	Liquid	100%	Nonionic	A rewetting agent for paper as for wet strength paper toweling, etc.
Surfax 1288	E. F. Houghton & Co.	Alkyl aryl sulfopropionic ester	Wetting Penetrant	Liquid	60%	Anionic	Textile, for wetting and rewetting, particularly in neutral or mildly alkaline solutions; used as dyebath leveler
Surfax 1410	E. F. Houghton & Co.	A sulfonated ester	Wetting Rewetting Emulsifier	Liquid	60%	Anionic	For textile wetting and rewetting, and dyebath leveling
Surfax WO	E. F. Houghton & Co.	Sulfated propyl oleate	Wetting Penetrant	Liquid	64%	Anionic	Combined penetrant, softener wetting and rewetting agent
Surfonic N-10	Jefferson Chemical Co.	Alkyl aryl polyethylene glycol ether	Emulsifier Detergent	Liquid	100%	Nonionic	Oil-soluble detergent and emulsifier, anti-foaming agent, dry cleaning detergent
Surfonic N-40	Jefferson Chemical Co.	Alkyl aryl polyethylene glycol ether	Emulsifier Detergent	Liquid	100%	Nonionic	Wetting agent, dispersing agent, emulsifier
Surfonic N-60	Jefferson Chemical Co.	Alkyl aryl polyethylene glycol ether	Emulsifier Detergent	Liquid	100%	Nonionic	Dry cleaning agent, emulsifier for insecticides, detergent
Surfonic N-95	Jefferson Chemical Co.	Alkyl aryl polyethylene glycol ether	Detergent Wetting Emulsifier Dispersant	Liquid	100%	Nonionic	Water-soluble industrial and household detergent, agricultural emulsifier, wool scouring agent and textile assistant

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Surfonic N-120	Jefferson Chemical Co.	Alkyl aryl polyethylene glycol ether	Detergent Wetting	Liquid	100%	Nonionic	Household and industrial cleaner, metal degreasing agent, emulsifier
Surfonic N-150	Jefferson Chemical Co.	Alkyl aryl polyethylene glycol ether	Detergent Wetting	Semi-solid	100%	Nonionic	Metal cleaner, household and industrial detergent, degreasing agent, emulsifier
Surfonic N-200	Jefferson Chemical Co.	Alkyl aryl polyethylene glycol ether	Detergent Wetting	Solid	100%	Nonionic	General wetting, dispersing and emulsifying agent at high temperatures
Surfonic N-300	Jefferson Chemical Co.	Alkyl aryl polyethylene glycol ether	Detergent Wetting	Solid	100%	Nonionic	General wetting, dispersing and emulsifying agent at high temperatures
Surfynol 82	Air Reduction Chemical Co.	Dimethyl octynediol	Dispersant	Solid	100%	Nonionic	An aqueous anti-gelling agent for CMC, starch, polyvinyl alcohol, etc.
Surfynols 102 104	Air Reduction Chemical Co.	Aliphatic substituted butyne diols and octyndiols such as 	Detergent Dispersant	Wax	100%	Nonionic	Non-foaming surface active agents, for use in low foam detergents, pigment dispersing agent and for viscosity reduction and gelation retarder in gum and starch solutions; R_1, R_2, R_3 and R_4 are aliphatics of molecular weights of 200-225
Surfynols 104A 104E	Air Reduction Chemical Co.	As for "104"	Defoamer	Liquid	50%	Nonionic	"104A" is a 50% active solution of "104" in 2 ethyl hexanol, and "104E" is a 50% active solution of "104" in diethylene glycol. Both are used as defoamers in the manufacture of rubber latex, paper coatings and emulsion paints
Surfynol TG	Air Reduction Chemical Co.	A mixture of "Surfynol 102" and an alkyl phenyl ether of polyethylene glycol in ethylene glycol	Dispersant	Liquid	83%	Nonionic	A pigment dispersant for emulsion paints
Synotex	Dixo Co.	A compounded product	Emulsifier	Liquid		Nonionic	Used as a pre-spotting agent, emulsifier, wetting agent and detergent by the dry cleaning industry
Syn-o-tol AV	E. F. Drew & Co.	A modified coconut oil amino condensate	Detergent Wetting Emulsifier	Liquid	95%	Anionic	A synergist and thickener, good solvent and emulsifier for bath oil preparations, improves foaming, corrects hard water problems
Syn-o-tol VS	E. F. Drew & Co.	A coconut fatty acid amino condensate	Stabilizer Wetting	Liquid	90%	Anionic	Developed to impart high viscosity at low aqueous dilutions; a thickener and foam stabilizer for lotion type shampoos
Syntergent MV	Hart Products Corp.	Sulfated fatty acid amide	Detergent Wetting	Paste		Anionic	A water soluble scouring agent for the textile trade
Syntergent K	Nopco Chemical Co.	Fatty amide condensate	Detergent	Liquid	30%	Nonionic	General purpose detergent for textile, leather, paper and metal working
Syntergent 25 25M	Nopco Chemical Co.	Alkyl aryl polyoxyethylene condensate	Detergent Wetting	Liquid	100%	Nonionic	Dyeing penetrant, fulling and scouring aid; rewetting agent for toweling; carbonizing penetrant; solvent emulsifier
Syntergent 130-W	Nopco Chemical Co.	A modified ethylene oxide condensate	Detergent	Liquid	98%	Amphoteric	Use: A low temperature raw wool scouring agent
Syntex M Liquid	Colgate-Palmolive Co.	Sulfated glycerol fatty ester	Detergent	Liquid		Anionic	An industrial light duty liquid detergent
Synthetics AD160	Hercules Powder Co.	Polyethylene glycol ether of hydroabietyl alcohol	Detergent Emulsifier	Wax	100%	Nonionic	Hydrophilic, emulsifier, low-foaming detergents
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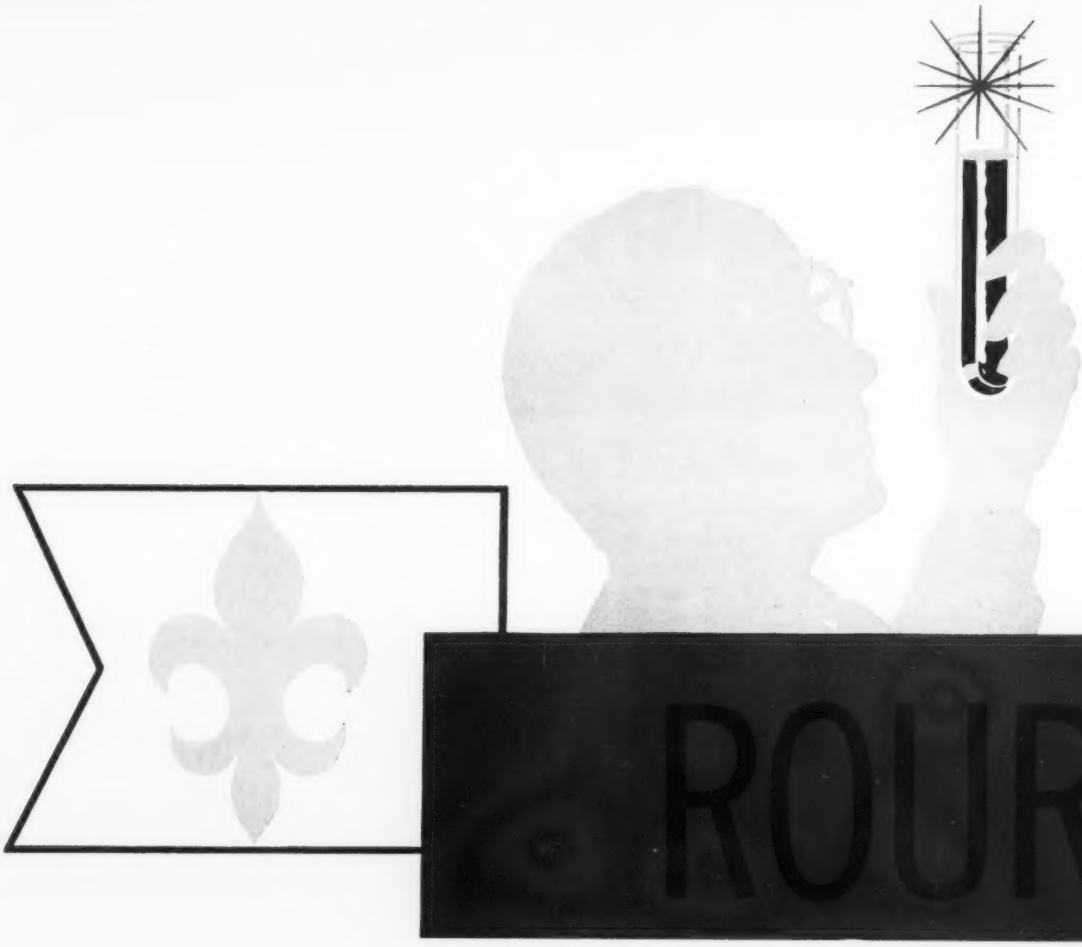

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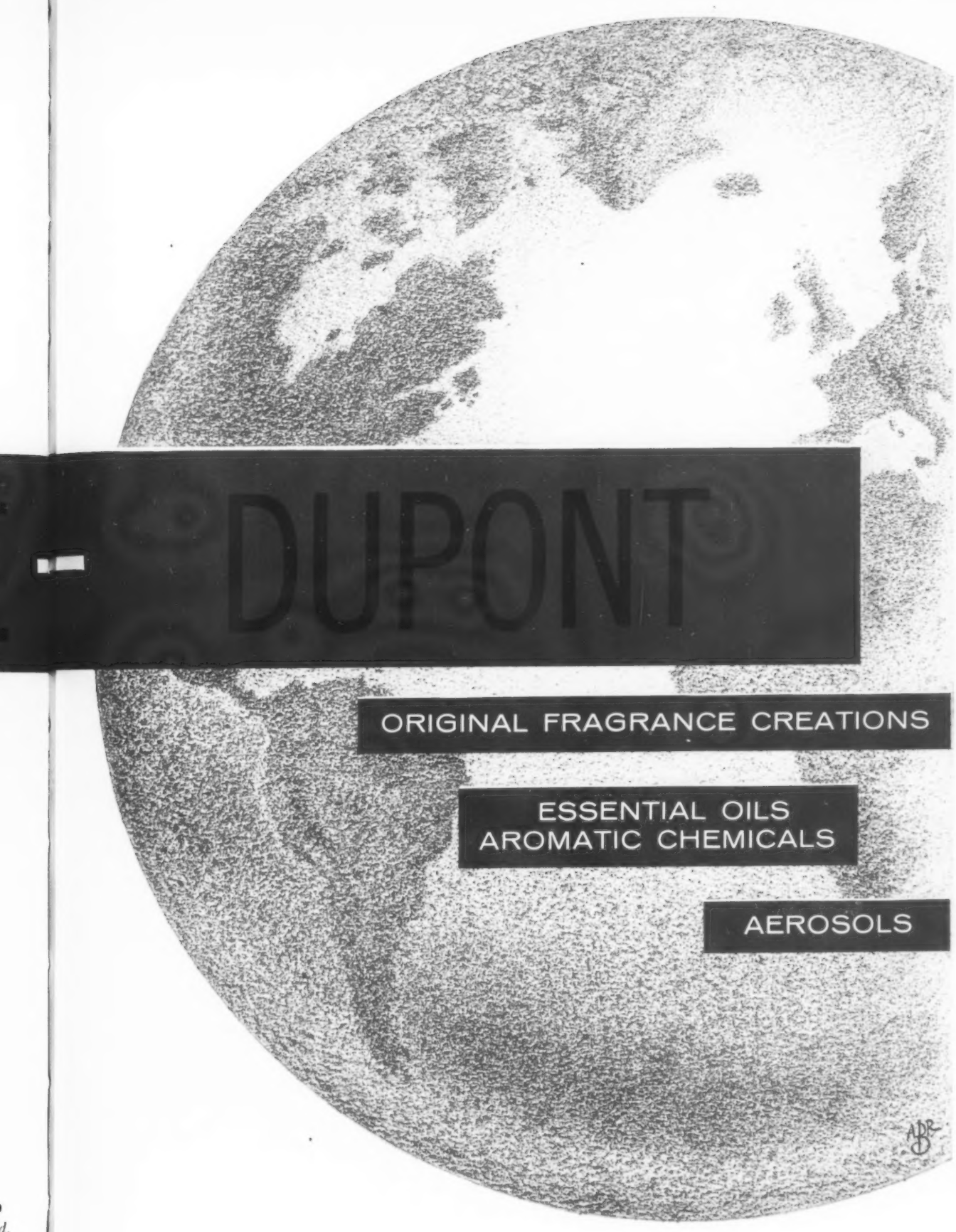
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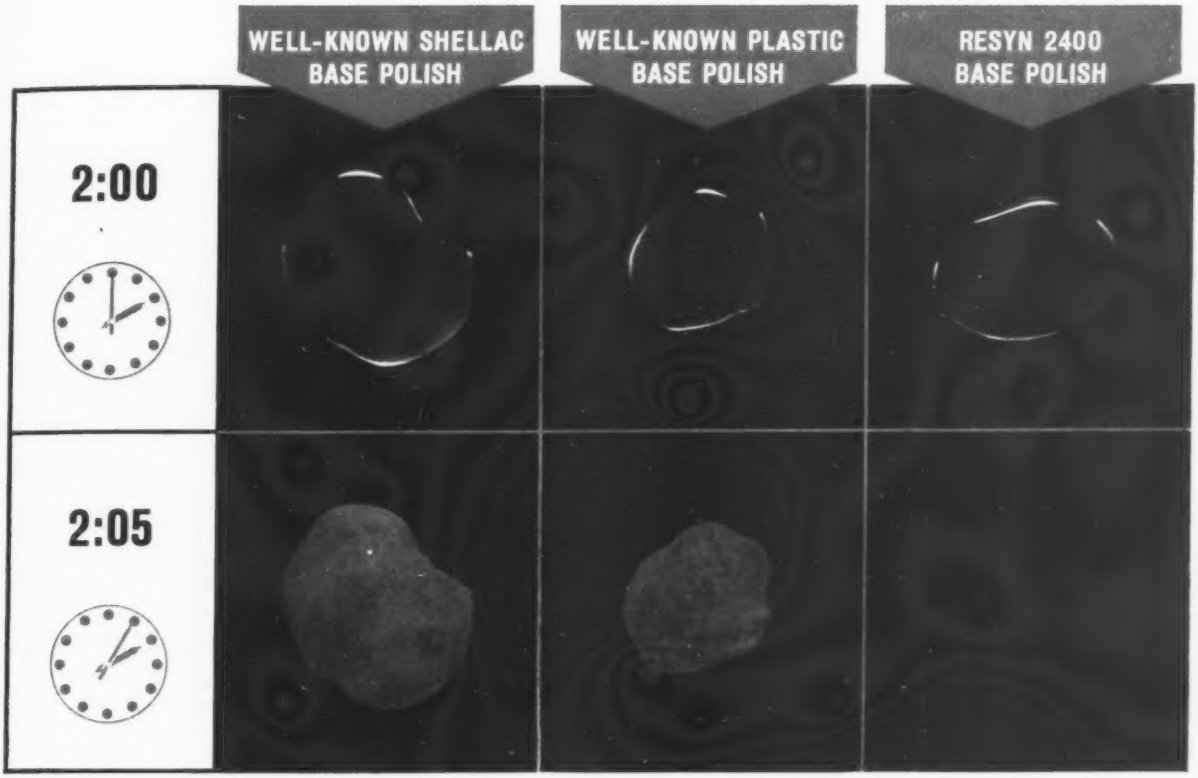

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* *U.S. Department of Agriculture in Interpretation 21, Federal Register, September, 1956*

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Residual effectiveness of certain insecticides in

German Cockroach Control

By James M. Grayson* and F. E. Jarvis, Jr.**

Virginia Agricultural Experiment Station,
Blackburg, Va.

LAAKE (1955) considered "Malrin" (Agricultural Specialties, Dallas, Tex.) the safest material for control of resistant German cockroaches, although chlorthion and certain other materials were found to be highly effective for this purpose; when the American, the Oriental, and resistant German cockroaches were all present, however, best results were obtained from mixtures of malathion and dieldrin. In tests designed to determine the residual effectiveness of various formulations of insecticides in killing resistant and non-resistant German cockroaches, Jarvis and Grayson (1957) found "Am. Cyanamid 4124" to be the most effective of the nine materials tested, as it gave complete kill on all surfaces in one day. "Diazinon" (Geigy Chemical Corp., Ardsley, N. Y.) gave complete kill in three days on "Masonite" and wood, but failed on galvanized sheet metal. "Malrin" and malathion gave good control after six days of exposure to treated surfaces.

The purposes of the tests reported here were to determine the effectiveness of a number of insecticidal formulations on a standard surface, and one formulation on a variety of different surfaces, in killing resistant and non-resistant German cockroaches after the deposits had aged for different periods of time. Both the resistant and normal cockroach strains used in the tests were obtained from the department of zoology and entomology, Ohio State University, Columbus. The resistant strain, which originally came from San Antonio, Tex., appeared to be highly resistant to chlordane.

Thirteen formulations involving seven different materials were included in the experiment. All of these were tested on tempered "Masonite" panels; in addition, one formulation was tested on galvanized sheet metal panels, and another was tested on panels of six different surfaces commonly found in buildings. The materials were as follows: technical chlordane; dieldrin 0.5% oil base; malathion emulsifiable liquid (57%), premium grade; "Diazinon 25E"; "Am. Cyanamid 4124", 25% emulsifiable liquid; "Korlan 44E"; and "Dilan 25E" (Commercial Solvents Corp., Terre Haute, Ind.). A re-

TABLE 1.—Percentage mortalities at the end of one and three days[1] following exposure of female German cockroaches to panels which had been dipped in different insecticide formulations and the deposits allowed to age for various periods of time.

Insecticide and Formulation	Cockroach Strain	Age of Insecticide Deposits (Days): 2	7	15	30	60
Tempered "Masonite" Panels						
Chlordane 2.0%	Resistant	5— 48	0— 18	2— 15	3— 15	0— 4
(Oil Base)	Non-res.	56— 98	75— 85	49— 86	52— 87	13— 74
Dieldrin 0.5%	Resistant	25— 60	0— 15	11— 21	3— 8	0— 4
(Oil Base)	Non-res.	34— 83	58— 80	51— 80	18— 62	9— 76
Malathion 1.0%	Resistant	89— 98	84— 98	91— 95	93— 97	73— 85
(Emulsion)	Non-res.	69— 93	70—100	32— 88	63— 97	40— 73
Malathion 2.0%	Resistant	82—100	81—100	95— 98	92—100	74— 94
(Emulsion)	Non-res.	82—100	70—100	69— 94	80— 95	57— 93
Malathion 2.0%	Resistant	97—100	90—100	83—100	88—100	76— 95
(Oil Base)	Non-res.	89—100	93—100	89—100	87—100	57— 95
Diazinon 0.25%	Resistant	100—100	95—100	100—100	88—100	49— 90
(Emulsion)	Non-res.	100—100	100—100	100—100	95—100	51—100
Diazinon 0.5%	Resistant	100—100	100—100	100—100	97—100	94—100
(Emulsion)	Non-res.	100—100	100—100	100—100	100—100	99—100
Diazinon 0.5%	Resistant	100—100	100—100	100—100	98—100	69— 98
(Oil Base)	Non-res.	100—100	100—100	100—100	100—100	80—100
Dilan 2.5%	Resistant	5— 46	15— 36	6— 44	2— 22	9— 48
(Emulsion)	Non-res.	2— 27	0— 28	22— 61	3— 32	3— 28
"4124" 0.5%	Resistant	100—100	100—100	100—100	92—100	90—100
(Emulsion)	Non-res.	100—100	100—100	100—100	94—100	72—100
"4124" 1.0%	Resistant				100—100	96—100
(Emulsion)	Non-res.				100—100	88—100
"4124" 2.0%	Resistant				97—100	100—100
(Emulsion)	Non-res.				100—100	100—100
ET-14 (Korlan) 1.0%	Resistant	100—100	100—100	92—100	84—100	49— 95
(Emulsion)	Non-res.	100—100	93—100	88—100	79—100	48—100
Galvanized Sheet Metal Panels						
Malathion 2.0%	Resistant	94—100	100—100	98—100	91—100	88—100
(Emulsion)	Non-res.	96—100	100—100	100—100	80—100	72— 93

[1] Under each column the first figure is the percentage mortality at the end of a one-day exposure period, and the second figure is the same for a three-day exposure period. Each figure is based upon the results of three or four replicates, each of which consisted of 10 to 20 insects.

* Acknowledgement is made to the National Pest Control Association for grant-in-aid support of this work; and to Dr. P. J. Spear, Technical Director of N.P.C.A., for suggestions in planning the work.

** Summer employee. During the academic year Dr. Jarvis is a staff member in the department of biology, V.P.I. woman's division, Radford College, Radford, Virginia.

fined kerosene was used in preparing the oil base formulations.

The procedure employed in rearing the cockroaches and in obtaining adults within known age limits for testing purposes was the same as that previously described (Jarvis & Grayson, 1957). The panels were treated by dipping them in the desired insecticide formulation, allowing them to dry, and then suspending them from the joists of a service building until they had aged for the required length of time. All surfaces of the panels were exposed to air movements by suspending them in vertical racks with spaces between panels.

The testing procedure consisted of placing female German cockroaches in battery jars, each of which contained three treated panels. Most of the tests were replicated four times, using 20 cockroaches for each replicate, but it was not possible to adhere rigidly to this plan throughout all the tests. Mortality readings were taken at the end of one and three days following exposure of the cockroaches to the treated panels.

Results

THE results are shown in tables 1 and 2. The most effective of the materials tested was "Am. Cyanamid 4124" which, at one and two per cent levels, gave good to excellent kill in all tests within the first day following exposure to the treated panels. At a concentration of 0.5 per cent, this material gave complete kill in all tests after the cockroaches had been exposed for three days to the treated panels. Some of the tests with "Am. Cyanamid 4124" at the higher concentrations were not made because they appeared unnecessary in view of the excellent kill obtained from the deposits which had aged for 30 and 60 days. On "Masonite" panels, "Diazinon" at 0.25 and 0.5 per cent levels gave good to excellent kill after one day of exposure to deposits that had aged for 30 days, or less, but three days of exposure were required to obtain good to excellent kill from deposits that had aged for 60 days. Variable results were obtained from the 0.5 per cent "Diazinon" emulsion on different surfaces. Based upon the kill obtained after three days of exposure to treated panels, the maximum ageing intervals for deposits which still gave satisfactory control were as follows: 60 days on wall board, 30 days on painted wood and plastic tile, seven days on inlaid linoleum, and two days on "Congoleum" flooring. Very low kill of cockroaches was obtained in all tests involving 0.5 per cent "Diazinon" emulsion on glass. A one per cent emulsion of "Korlan" applied to "Masonite" panels gave satisfactory kill of cockroaches after one day of exposure to deposits that had aged for seven to 15 days, and after three days of exposure to deposits that had aged for 60 days. Malathion at the two per cent level gave good to excellent control in all tests after the cockroaches had been exposed to the treated panels for three days, but at the one per cent level the deposits failed to give satisfactory control after ageing for 60 days.

Oil base formulations of two per cent chlordane and 0.5 per cent dieldrin on "Masonite" panels gave very low kill of resistant cockroaches in all tests, and only moderately satisfactory kill of non-resistant cockroaches on deposits which had aged no longer than 15 to 30 days. Unsatisfactory kill was obtained in all tests from a 2.5 per cent "Dilan" emulsion.

TABLE 2.—Percentage mortalities at the end of one and three days[1] following exposure of female German cockroaches to panels of different materials which had been dipped in 0.5 per cent "Diazinon" emulsion and the deposits allowed to age for various periods of time.

Material	Cockroach Strain	Age of Diazinon Deposits (Days): 2	7	15	30	60
Glass	Resistant	0— 0	0— 0	3— 12	0— 0	0— 6
	Non-res.	2— 15	8— 37	2— 7	1— 3	6— 8
Painted wood	Resistant	53— 97	62— 95	35— 85	60— 97	24— 74
	Non-res.	69— 99	75— 97	36— 71	30— 96	24— 74
Plastic tile	Resistant	100—100	91—100	33— 99	43— 96	1— 47
	Non-res.	100—100	84—100	50— 96	18— 93	9— 62
Congoleum flooring	Resistant	75— 97	30— 75	8— 63	1— 35	5— 13
	Non-res.	67— 99	22— 71	6— 65	4— 37	1— 33
Inlaid linoleum	Resistant	81—100	43— 95	10— 65	11— 51	5— 10
	Non-res.	81— 97	63— 96	31— 88	4— 29	4— 10
Wallboard (Upson)	Resistant	98—100	99—100	75—100	66— 95	38— 93
	Non-res.	99—100	99—100	87—100	80—100	48— 96

[1] Under each column the first figure is the percentage mortality at the end of a one-day exposure period, and the second figure is the same for a three-day exposure period. Each figure is based upon the results of three or four replicates, each of which consisted of 10 to 20 insects.

Summary

THE residual effectiveness of 13 insecticidal formulations applied to tempered "Masonite" panels in killing female German cockroaches from resistant and non-resistant strains was determined. In addition, one formulation was further tested on galvanized sheet metal panels and another was tested on panels of six different materials commonly found inside buildings. The panels were dipped in the insecticidal formulations and the deposits allowed to age for periods of two, seven, 15, 30 and 60 days before placing the cockroaches on them. Mortality counts were taken at the end of one and three day periods of exposure to the treated panels.

On tempered "Masonite" panels the order of effectiveness of the organophosphorus insecticides, as herein tested, was as follows: "Am. Cyanamid 4124 > "Diazinon" > "Korlan" > malathion. Chlordane and dieldrin on "Masonite" panels gave very low kill of resistant cockroaches, and only moderately satisfactory kill of non-resistant cockroaches, while "Dilan" gave unsatisfactory control. The order of effectiveness of "Diazinon" on panels of different materials was as follows: wall board > painted wood > plastic tile > inlaid lino-

(*Turn to Page* 133)

New gray all-purpose primer paint spray of Krylon, Inc., Norristown, Pa., provides bond on wood, metal, plastic, ceramic surfaces, etc. Designed as a companion product for the firm's fast drying spray enamels, new aerosol coating retails for $1.79/16 oz. can.

Aerosol Protective Coatings

By Ludwig J. Hecht*
Lenmar Lacquers, Inc.
Baltimore

DURING the last two years much progress has been made in aerosol surface coatings, but in spite of this progress, I still consider the field a relatively new one, a field which still needs much more research. As much as we have advanced during the past few years, surface coatings still have great new possibilities, untapped and untested so far.

Before discussing coatings to be applied from aerosol containers, I will have to devote a few paragraphs to "coatings" in general. "Coatings" or "finishes" referred to in this paper are the types of surface coatings handled by the paint and lacquer industry. This eliminates such items as suntan lotions, pharmaceutical sprays, etc., which in the strictest sense of the term are also surface coatings. However, these types of coatings can hardly be classified as "finishes," which are the materials this paper will deal with. A surface coating is mainly applied for two purposes: to protect the coated surface from damaging influence of its surrounding atmosphere, and further to enhance and to beautify its appearance. In most cases, both purposes, protection and improvement of appearance, are sought. Other uses of coatings are as markings, electrical insulation, and many others.

There are many types of coatings available, which can be classified in accordance with a variety of principles. For the purpose of this paper we will use a very simple classification system. There are mainly two groups of coatings: (1) air drying types, and (2) heat drying types. The heat drying types naturally need heating equipment of some sort. They are usually called baking type coatings, like baking enamels, baking lacquer, baking varnish, etc., and widely used in many industries. Since special equipment is needed, heat drying coatings have so far not found an important use by aerosol application. Aerosol coatings are mainly used by the "do-it-yourself" trade, the householder. Therefore, we will not deal with baking type coatings in this paper.

* Paper presented during 44th annual Chemical Specialties Manufacturers Assn. meeting, Hollywood, Fla., Dec. 11, 1957.

Air drying type coatings, which are so far the more important group of the aerosol protective coatings, will be classified for the purpose of this discussion, perhaps somewhat arbitrarily, into two main groups: (1) varnish type, and (2) laquer type. Both terms are not overly accurate, but are used here to simplify identification. Here is how I define the two groups: Varnish type coatings are those which dry mainly by oxidation or polymerization, or both. Lacquer type coatings are those which dry by solvent evaporation only. This difference is most important.

It is well known that varnish, paint, architectural enamel, and the like, either for exterior or interior use, need hours, if not days, to go through the stages of becoming dust free, tack free, dry and hard. This conventional type dries by oxidation and polymerization, of course, also by solvent evaporation, but oxidation is the time consuming process. There are coatings which dry by polymerization only, such as polyesters, epoxy coatings and some urea formaldehyde finishes. These coatings are not suited for aerosol packing at this time and so will not be discussed.

Among varnish type coatings, the so-called synthetic or alkyd resin types are the most important ones for use in aerosols. Air drying alkyds are among the fastest drying varnish type finishes. A good alkyd finish has durability, luster, flow and many other desirable features. Alkyds are the most important "varnish type" finishes for use in the aerosol field.

Lacquer Finishes

THE second group, the lacquer type finishes, dries by evaporation of the solvents only. There are numerous basic raw materials, which belong to this classification, many of them are better known as plastics. Lacquer finishes can be formulated from ethyl cellulose, acetate-butyrate, cellulose acetate, chlorinated rubber, "Plyolite," vinyl resins, and acrylic resins, similar to "Lucite or "Plexiglas." In fact, all of these raw materials have their specific usefulness. Some, like the acrylic resins, are widely used. Some have only specialty value so far. Among the lacquer type coatings, the most important ones, however, are nitrocellulose lacquers. Nitrocellulose still ranks as number one among the fast drying coatings for the simple reason that cellulose nitrate is compatible with many other film formers, such as resins and plasticizers, while most of the other basic lacquer raw materials, as mentioned before, have limited compatibility. Some of these other plastic film formers such as acetate butyrate or acrylic resins have certain advantages over nitrocellulose. They are superior with regard to light and weather resistance. However, nitrocellulose still remains the leader within the lacquer group to such an extent that later on I shall deal with two types of coatings only: the alkyd and nitrocellulose coatings; all others are too specialized. Dealing with them in detail would be far beyond the scope of this paper.

Aerosol Coatings

CERTAIN general statements apply to all aerosol coatings. Formulations for aerosol coatings are quite different from those for coatings applied in more orthodox fashion. Aerosol coatings need special formulation, particularly with regard to the solvent content. Because propellants become part of the formula in aerosols, and since the behavior of a chloro-fluoro hydrocarbon as a solvent is quite different from that of the solvents commonly used in surface coatings, special allowances have to be made to accommodate the unavoidable presence of hydrocarbon propellants. The formulator must also take into consideration the fact that coatings in aerosol containers are used often by inexperienced operators. Although experience has proved that millions of people can learn simple spray technique, this

Aerosol spray painting of garden chair.

CSMA Aerosol Division photograph

is due largely to clever, unorthodox formulation with solvents. Fast drying is essential to avoid runs on vertically sprayed surfaces. Conversely, enough slow drying solvents must be present for good afterflow, resulting in a smooth surface, free of streaks, "orange peel," etc. Of course, good hiding power of pigmented coatings is essential to prevent the deposit of too heavy a film.

Generally, it can be stated that formulation has to be done with great care. One fact cannot be stressed enough: the usefulness and suitability of any raw material has to be tested thoroughly before being put into actual batches. Experience has shown that a raw material seemingly identical with one used in a successful formulation, can cause trouble when bought from another raw material supplier. Two alkyd resins, for instance, which can be interchanged for general purpose coatings, cannot always be substituted in aerosol formulations. Where one will be satisfactory, the other may not, often for reasons unknown.

In an article about aerosol paints in the November 1956 issue of Aerosol Age, there is a headline which reads as follows: "The

potential for aerosol paints is huge, but one can't simply dump a standard paint formulation into an aerosol container and expect it to work. Compatibility and viscosity are called key factors in successful aerosol paints." There is further a quotation in the same article by Glen Piper of du Pont's Freon Products Division: "Every time you make even the slightest change in the formulation, you have to go right back to the lab for complete testing. Don't assume that because you can switch components in a brush or spray paint, you can make the same changes in an aerosol paint."

This fact cannot be stressed enough. No formulation should be released for production unless it is tested thoroughly and aged in aerosol containers for at least six months. Thorough testing before and after are the essence of aerosol coating formulation. Testing "before" means testing and checking of raw materials. It is important to have strict specifications for every raw material. Testing "after" is even more important to detect a faulty batch before it is sold to the customer. Sample containers of each batch should be made in the laboratory, and later on, samples taken from the actual plant loading. Both of them should be sprayed periodically to observe any physical or chemical change that might have taken place in the can. We make periodic sprayouts for at least one year; every two weeks, at the beginning, later on once a month. One can accumulate quite a large sprayout file this way, but we feel that this method of frequent checking has paid off tremendously. We have learned to increase the shelf life of aerosol coatings by elimination of certain raw materials to the point where it can be classified as almost indefinite.

Naturally, raw materials used in the formulation are not the only factors to be considered in determining can stability. The can and valve are of at least equal importance. The biggest source of trouble is, or rather was, the presence of moisture in the loaded can. Moisture can cause the container to corrode or be responsible for chemical changes of certain pigments. This, in turn, causes thickening or even gelling of the formulation and, even, sometimes precipitation of the pigment and film-formers. Great improvements have been made in this respect during the last two years, but the last word has not been said. Further developments and improvements will be made in products as well as containers and linings in the years ahead. The last two years certainly have taught us a lot about selecting propellants; even more about developing improved coatings.

As I indicated at the beginning of this paper, two types of coatings are of main importance at the present time: the synthetic resin or alkyd type, which dries by oxidation; and the two laquer types (acrylic and nitrocellulose), which dry by evaporation. The acrylics are widely used for clear coatings. They have their main limitations in that they cannot tolerate high non-volatile contents and do not have quite the hardness of nitrocellulose lacquer. Further, they are difficult to pigment.

Alkyds and nitrocellulose are now the main raw materials in the formulation of "enamels," which is the term used in the paint industry for pigmented finishes. Pigmented coatings find their greatest use among the "do-it-yourself" trade. Traditionally, the properties looked for in an enamel have been good hiding power, flow and luster. Lately there has been an increasing market demand for low luster enamels, mainly in satin finishes. Which type of enamel is preferred, of course, depends upon the taste of the users. Since both alkyd as well as lacquer enamels are being marketed consumer preferences can be established.

As was explained earlier, nitrocellulose is compatible with many other film forming raw materials, and most nitrocellulose lacquers sold for industrial purposes, contain resins and plasticizers. Lacquers used for aerosol coatings contain such high percentages of alkyd resins that they actually combine the advantages of the toughness and fast drying of nitrocellulose, as well as the high luster, high film build-up and good adhesion of alkyd coatings. Nitrocellulose formulations used in aerosol packing are essentially the same type as those used in automotive finishes, high class furniture coatings, and the like, with necessary modifications for aerosol filling. In spite of high alkyd content, nitrocellulose aerosol enamels dry very fast. Depending on

Greater sales of aerosol marine lacquers are foreseen as boating popularity rises.
Plasti-Kote photograph

weather conditions, a nitrocellulose enamel is dust free within two to four minutes, tack free within 10 minutes, and coated objects can be used within two hours. A chair which was coated two hours earlier can be sat on without any of the enamel coming off on clothing.

On the other hand, drying time of alkyd enamels is much slower. True, there are some alkyds which dry fast, which means that they are dust free within one hour. Alkyd enamels are seldom used for aerosol coatings, because they lack general durability. A good alkyd enamel requires at least 12 hours and sometimes longer to be dry enough to use. Recoating, if a second coat is desired, should not be done before about 16 to 24 hours. Thus, if for no other reason than for drying time, nitrocellulose lacquers are more suitable for use by the layman. In fact, aerosol lacquers are the answer to the dream of the lacquer industry for a method of applying lacquers that is feasible for household use. Previously it was virtually impossible for the householder to apply lacquers successfully because the speed with which they dry precludes the use of a brush.

There are, of course, good lacquers and bad lacquers, just as there are good and bad alkyd enamels. Comparing a high quality lacquer enamel with a high quality alkyd enamel—the only kind that should be used for aerosol sprays—a nitrocellulose-alkyd lacquer has, besides its principal advantage of rapid drying, the following very important properties. From the nitrocellulose component: lacquers have greater toughness, since nitrocellulose is a tough plastic. Further, they are extremely hard, have better washability, wear longer, have better block-and print resistance soon after the application of the coating, better color retention, and last, but not least, a second coat can be applied within a few minutes after the first coat, so that the object to be coated does not have to be handled again the next day.

From the alkyd part the nitrocellulose enamel gives good film build-up, high gloss and improved adhesion. For all these reasons I honestly believe that nitrocellulose-alkyd coatings are the most suitable for aerosol use. Do they have some disadvantages compared with pure alkyd enamels? I cannot think of too many. The main disadvantage is probably cost of raw materials. Alkyd enamels resulting in the same film thickness and hiding are probably somewhat cheaper. The question of whether alkyd enamels will give higher film-thickness than nitrocellulose-alkyd lacquers has been discussed. We have not come up with a positive answer as yet. We will have some quantitative results soon. However, I can make the statement right now that, if any, the difference in film build-up is very insignificant. I am sure, there will be further important improvements introduced into the field of aerosol surface coatings in the near future.

★

Aerosols for touch-up and painting and refinishing simplify jobs where coatings must be applied to difficult-to-reach spots.

Plasti-Kote photograph

MCA Proceedings Available

The Manufacturing Chemists' Association, Inc., 1625 Eye St., N. W., Washington 6, D. C., recently announced publication of proceedings of its 1957 conference on precautionary labeling. The 52-page book includes complete papers presented at the meeting and a list of 225 industry, government and publication representatives who attended.

MCA's 1958 conference on precautionary labeling will be held at the Hotel Shamrock, Houston, Apr. 30. Copies of the 1957 proceedings may be obtained from MCA for one dollar each.

Antifreeze Corrosion Testing

Specimen holder for metal corrosion coupons mountable in automobile engines yields data on cooling systems that contain antifreeze

By J. R. Heard, J. W. Compton and M. A. Boehmer*

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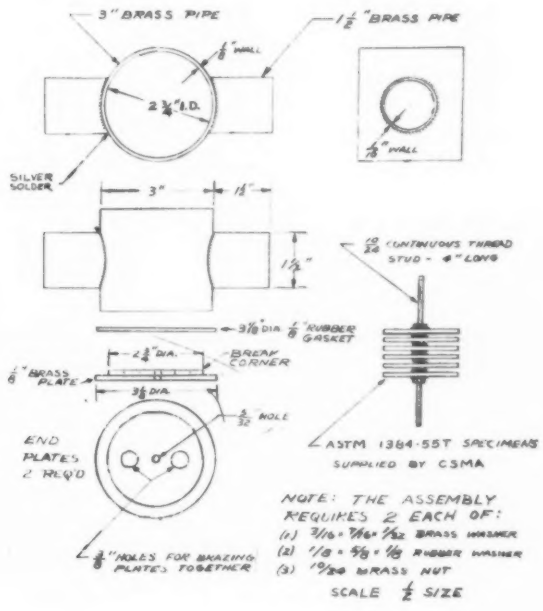
ANY new antifreeze composition, which has shown promise in laboratory tests, must be tested under actual service conditions in automobiles to determine its suitability. This qualification testing is normally carried out by the use of the antifreeze in a large group of cars such as those of employees, company-owned vehicles and fleet automobiles. The antifreeze is installed in the freshly flushed radiators of cars which receive normal useage. Variables which might affect the condition of the cooling system are recorded during the season. Samples are taken initially and at intervals during the test and information is recorded as to the mileage, the appearance of the antifreeze, buffer capacity, pH value, freezing point, metal contamination, foaming characteristics, etc. Radiators may be removed and examined, as well as other components of the cooling system. The information obtained from these data forms a basis for the final decision as to the acceptance or rejection of the antifreeze formulation.

In order to compare more effectively various antifreeze compositions under actual service conditions and to be able to evaluate new inhibitors and additives, it seemed desirable to place weighed corrosion specimens in an automobile cooling system. This would allow a direct correlation with laboratory corrosion methods, would give a quantitative measure of the corrosion and would provide a means for the evaluation of corrosion without the removal and sectioning of radiators and other equipment. It would also provide service corrosion information at a considerably reduced cost and thus would be of particular value in preliminary evaluations which might not justify the cost of equipment replacement.

*A paper presented during the 44th annual meeting, Chemical Specialties Manufacturers Assn., Hollywood, Fla., Dec. 10, 1957.

Figure 1 (below). Exploded view of metal coupon mounting device with corrosion specimens on the mounting rod.
Figure 2 (right). Fleet test corrosion specimen holder.



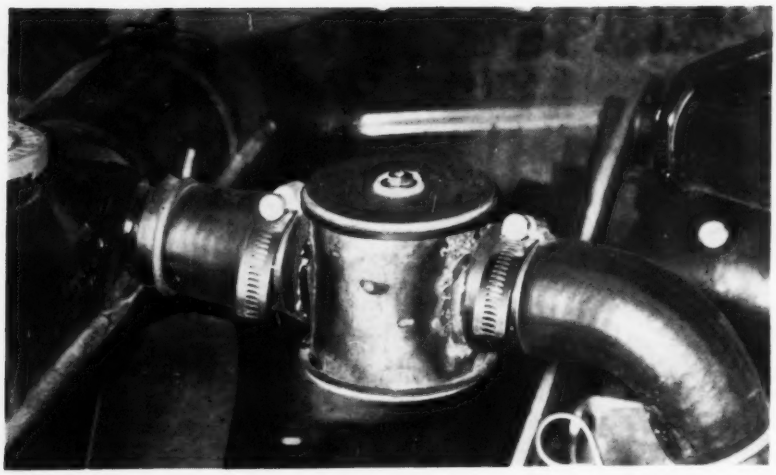


Figure 3. Photograph of container in which metal test coupons are mounted in automobile engine between thermostat outlet of motor block and the top of the radiator tank.

If metal specimens were to be placed in an automotive cooling system, the specimen holder used should be relatively inexpensive; readily installed in most automobiles, easily maintained and serviced and be trouble free.

Container for Specimens

CORROSION tests on metal coupons placed in automobile cooling systems have been conducted at Wyandotte Chemicals for the past five winter seasons. To accomplish this and to meet the requirements of such a test, we decided to mount the specimens in a container installed in the automobile between the thermostat outlet of the motor block and the top radiator tank. This location is at a point of high temperature, flow and aeration, and is readily accessible for servicing. The corrosion specimens used were the same as those specified by the ASTM Method D 1384-55T "Laboratory Glassware Corrosion Test" to provide a basis for comparison with laboratory tests. Figure 1 is an exploded view of the device with the corrosion specimens on the mounting rod.

The body is constructed of standard three inch and 1½ inch brass pipe. The 1½ inch pipe is silver soldered in position. It has been found best for ease of construction and servicing to use a vault-type seal secured in position by a centered mounting stud. The end plates are constructed of ⅛ inch brass plate, the two pieces comprising an end are sealed together by means of the brazing holes shown in Figure 2. The gaskets are 3½ inch diameter by ⅛ inch rubber with a ⅛ inch center hole. These rubber gaskets may be used as test specimens if suitably coded and pretested for durometer hardness. The mounting stud, which also serves as the means for holding the end plates is a four inch long stud with a continuous 10/24 thread. On the outside of each end plate, a rubber washer, a metal washer, and a nut are assembled. Adequate sealing is accomplished by tightening the assembly which draws the vault-type seals in place. Figure 3 is a photograph of the device installed in an automobile.

The instructions of the ASTM D 1384-55 T method are followed for the preparation of the corrosion test pieces. The copper, solder, brass, steel, cast iron and aluminum coupons are the ones obtained through CSMA. After preparation, coding, and weighing, they are assembled at the middle of the mounting stud in the order named as specified in the ASTM D 1384-55 T laboratory test. Brass washers are used to maintain a space of ⅛ inch and brass hex nuts are used to secure the specimens in position.

There is adequate space in the device for additional test coupons. This has been used to test rubber specimens. Samples 2″ x 1″ x ⅛″ are prepared with a ⅛″ center hole. They are checked for Durometer hardness, initial weight and volume, and are mounted in the same manner as the metal coupons. The weighed and assembled specimens are placed in a desiccator until they are installed or removed by disassembling the holder, as shown in the photograph (Figure 1). Corrosion specimens can be changed at any interval during the test period by draining three to four quarts of test solution into a suitable container, installing new test specimens, and then returning the drained solution to the cooling system. The described specimen holder has demonstrated added convenience and time saving, plus reduced unit cost of manufacture when compared with previous devices used at Wyandotte Chemicals for fleet tests of automotive cooling systems.

Results

THIS device has been used in various modifications of Wyandotte Chemicals Corp. for the past few years. In carrying out these tests, automobiles of the same make, model and year have been used for comparative data. An effort has also been made to obtain vehicles which would approximately cover the same mileage during the test. Tests have normally been conducted from October through May, however, this may be varied to suit the purposes of the test. It has been found necessary to maintain radiator levels in the test cars at a full level, although this is seldom a problem. Failure to do so results in high corrosion of the cast iron and steel test coupons.

The metal losses per coupon for antifreezes considered satisfactory through service acceptance, are about 10 milligrams for the copper, brass, mild steel, and cast iron. The losses on solder and aluminum have tended to be higher. It was thought

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U.S.I. CHEMICAL NEWS

March ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1958

Polyethylene-Brass Bonds Possible with New Adhesive

A new adhesive developed by Bell Telephone Laboratories and reportedly able to resist a pull of 1,000 psi is being used to bond polyethylene directly to brass, brass-plated metals, and rubber. It is based on a compound described as partly hydrogenated polybutadiene, which is vulcanized by the addition of other materials. Any degree of unsaturation of the polybutadiene from 3-30% is reported to provide excellent adhesive action.

Temperatures from 250-350 F and pressures of 100 psi or less are required for bonding. A layer of the adhesive 2 or 3 mils thick is desirable. This layer can be brushed or sprayed on, or inserted between the materials to be bonded as a thin, prefabricated sheet.

Possible uses include bonding of polyethylene to brass in submarine cable amplifiers for underwater phone cables, linings for tanks and plating racks.

Sandwich of brass, polyethylene and rubber shown here is held together by new adhesive. It can support about 2,000 pounds.

ISOSEBACIC® Acid Synthesis To Be Described At April ACS Meeting

A paper on U.S.I.'s new dibasic acid synthesis is to be presented at the symposium on alkali metals, being held at the 133rd national ACS meeting in San Francisco, April 13-18.

The process described in the paper was developed for use in the company's new ISOSEBACIC® Acid plant which is soon to go on stream. In this synthesis, butadiene is reacted with very finely dispersed sodium to form disodiooctadiene — an organometallic compound. Carbonation, hydrogenation and acidification then yield three major products — sebacic acid, 2-ethylsuberic acid and 2,5-diethyladipic acid. The mixture of the three has been trade named ISOSEBACIC Acid by U.S.I. and is finding application as a vinyl plasticizer and as an intermediate for many plastic applications. Until the development of this synthesis, 2-ethylsuberic and 2,5-diethyl-

MORE

National Petro-Chemicals Corp. Becomes a Wholly-Owned Subsidiary of National Distillers

Giant Tuscola, Illinois Plant Continues Under U.S.I. Management

Panhandle Eastern Pipe Line Company's 40% minority interest in National Petro-Chemicals Corporation has been transferred to National Distillers, which thus becomes sole owner. Panhandle has acquired 1,500,000 shares of National Distillers common stock in exchange.

National Petro owns and operates a large integrated petro-chemicals plant at Tuscola, Illinois. U.S.I. Division of National Distillers will be responsible for management of this chemical complex as it has been in the past.

Expansion of National Petro beyond the original plan was one factor that led to the transaction. As originally conceived, Petro's basic raw materials were hydrocarbons extracted from Panhandle's natural gas pipeline at Tuscola. However, the company's new polyethylene plant at Houston will use ethylene purchased from another source.

Nixon Named Petro Vice President

John W. Nixon has been elected Vice President of National Petro, and manager of all National Distillers operations at Tuscola, including the Petro and U.S.I. facilities. Dr. Robert E. Hulse, National Distillers Executive Vice President, was named National Petro Executive Vice President, and Robert Cornwell, U.S.I. Vice President in Charge of Production, has also been named a Petro Vice President.

Since 1951, Petro has been producing ethylene, ethyl alcohol, ethyl chloride, ethyl ether, LPG and later polyethylene at Tuscola. It supplies hydrogen to U.S.I.'s ammonia production facilities. Petro also has the facilities to manufacture other related bulk chemicals on long term contract basis if the demand arises.

Panoramic view of a portion of the National Petro-Chemicals Corporation plant. Ethyl chloride, ethyl ether and ethyl alcohol production and storage facilities are visible in the background.

Attention: Users of Taxpaid Alcohol for Nonbeverage Purposes

The Alcohol and Tobacco Division of Internal Revenue has recently issued Industry Circular No. 57-37 covering the filing of nonbeverage drawback claims on taxpaid alcohol by manufacturers of nonbeverage products. This circular suggests that such claims be delivered personally to the office of the assistant regional commissioner (alcohol and tobacco tax), or sent by registered or certified mail, with postmarked receipt.

The suggestion has been made in order that the time of filing claims may be more readily established. It appears that in the past some claims placed in the mail within the 3-month filing period have not been received in proper time. Without proof of the time of filing, the Division has been unable, under the law, to allow refund in such cases.

New Technique for Bonding Non-Ferrous Metals Employs Alkali Metal Chloride Mix

Non-ferrous metals which are difficult to join by welding, brazing or soldering can now be bonded by a new and inexpensive process. A solder-like wire, consisting of a mixture of zinc, lithium, potassium and sodium chlorides wrapped in a zinc sheath, is applied to the metal surfaces to be joined after they have been heated to 800°F, the melting point of the wire.

The bond formed is chemical — a eutectic mix of zinc, the alkali metals, and the metals being joined. It is claimed to be strong, corrosion-resistant, and with electrical, physical and chemical properties similar to the metals concerned. Similar or dissimilar surfaces can be bonded using the new technique.

Among the materials which, it is claimed, can be joined by this technique are titanium, zirconium, aluminum, copper, magnesium, zinc, brass, silver, gold, beryllium, platinum, osmium, thorium, uranium, vanadium, tungsten, and some types of steel.

March ★ **U.S.I. CHEMICAL NEWS** ★ 1958

CONTINUED

ISOSEBACIC

adipic acids were relatively unknown.

Reaction conditions are very closely controlled to dimerize butadiene. If polymerization of butadiene were to occur, yields would be drastically reduced.

The paper describes prior art on the synthesis and general laboratory procedure, discusses the reaction and isomer distribution, and mentions other applications of the synthesis. It will be presented by Dr. Charles E. Frank, Manager of U.S.I. Organic Research.

Other Alkali Metals Symposium Topics

Some of the other topics planned for the alkali metals symposium are: New developments in liquid metals handling equipment; alkali metals as polymerization catalysts; sodium as a nuclear reactor coolant; manufacture of titanium by sodium reduction; alkali metals derivatives as components of Ziegler-type polymerization catalysts; manufacture of synthetic natural rubber, and large scale manufacture of sodium borohydride.

Paper on Titanium Patent Literature

A paper entitled "Survey of Patent Literature on Preparation of Titanium Metal" will be given for the Division of Chemical Literature at the San Francisco ACS meeting. This report, to be presented by Dr. Janet Berry who manages U.S.I.'s patent section, will graphically illustrate the great growth in titanium technology from patents obtained during the past 35 years.

Dr. Janet Berry and Dr. Charles Frank will present papers at the April ACS meeting in San Francisco.

Zirconium Provides Bright Light in Tiny Flashbulb

A new photoflash bulb is now on the market which is one-fourth the size of conventional bulbs, yet provides the same amount of light. In addition, the new photoflash gives faster light, and is therefore claimed to be the first bulb which can satisfy both box camera users and professionals who require speed.

These results have been accomplished by replacing shredded aluminum with shredded zirconium. The latter metal oxidizes more efficiently, giving 50% more light per unit weight of oxygen consumed. It creates lower pressure at flash peak, permitting higher initial pressure for faster light. It burns cleaner, blackens the bulb less, and so gives more light.

The new bulb costs no more than regular photoflashes, even though zirconium is currently more expensive than aluminum. Increased production by zirconium suppliers like Mallory-Sharon Metals (owned ⅓ by U.S.I.) is expected to make zirconium available in larger quantities for this and other uses.

Methionine Overcomes Urinary Infections

Large doses of methionine have cleared up stubborn urinary tract infections which are resistant to antibiotics or other therapy, according to experiments at an eastern medical school.

Upon oral ingestion, methionine acted as an urinary acidifier, and reduced both the pH and the bacterial count of the urine. After methionine intake, the urine contained an antibacterial substance not present before methionine was given.

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TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U.S.I.

Polyethylene containers can now be coated with a varnish said to cut static, give high sheen, prevent scuffing. Another coating now available is claimed to reduce oil permeability and oxygen diffusion, give glass-like clarity. **No. 1331**

Ceramic woven fabrics for high-temperature insulation have been introduced which will withstand heat up to 2,000°F., according to producer. Made of aluminum silicate fiber, they are lightweight, flexible, have low bulk factor. **No. 1332**

New silicone compound containing salicyl groups in its structure can now be obtained. It is said to provide sunscreening action, does not wash off easily in water. **No. 1333**

Porous teflon filter cups 12 inches high by 5 inches I.D. can now be obtained for atomic energy use. These cylindrical cups are molded in one operation, are porous in the lower 7 inches only. They remove particles over 3 microns. **No. 1334**

Acylase I, an enzyme obtained from hog kidneys and capable of separating many synthetic dl-amino acids, is now available in developmental quantities. Enzymatic resolution is said to be more economical than other techniques. **No. 1335**

New type of stirring paddle combines centrifugal force, suction, shearing action, counter whirl. Claimed to promote high flow velocity through entire vessel, ensuring maximum dispersion with minimum particle size. **No. 1336**

Acrylic emulsion paint behavior under test exposure in every climatic region in the U. S. is reported in a 56-page brochure just published. Detailed summaries, tables and photos on 3,000 tests which began in 1952-53 are included. **No. 1337**

New infrared analyzer has been announced for measuring concentrations of gases of medical interest such as carbon dioxide, nitrous oxide, cyclopropane, etc. It is expected to be used in such work as pulmonary investigations and research on new anesthetics. **No. 1338**

A method for restoring the flavor of processed foods by adding flavor enzymes is described in a reprint now available. The studies described were carried out on cabbage and related foods, but the method works with many other foods. **No. 1339**

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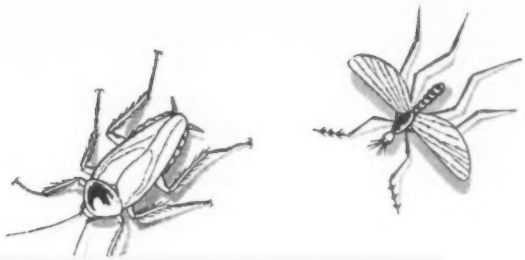

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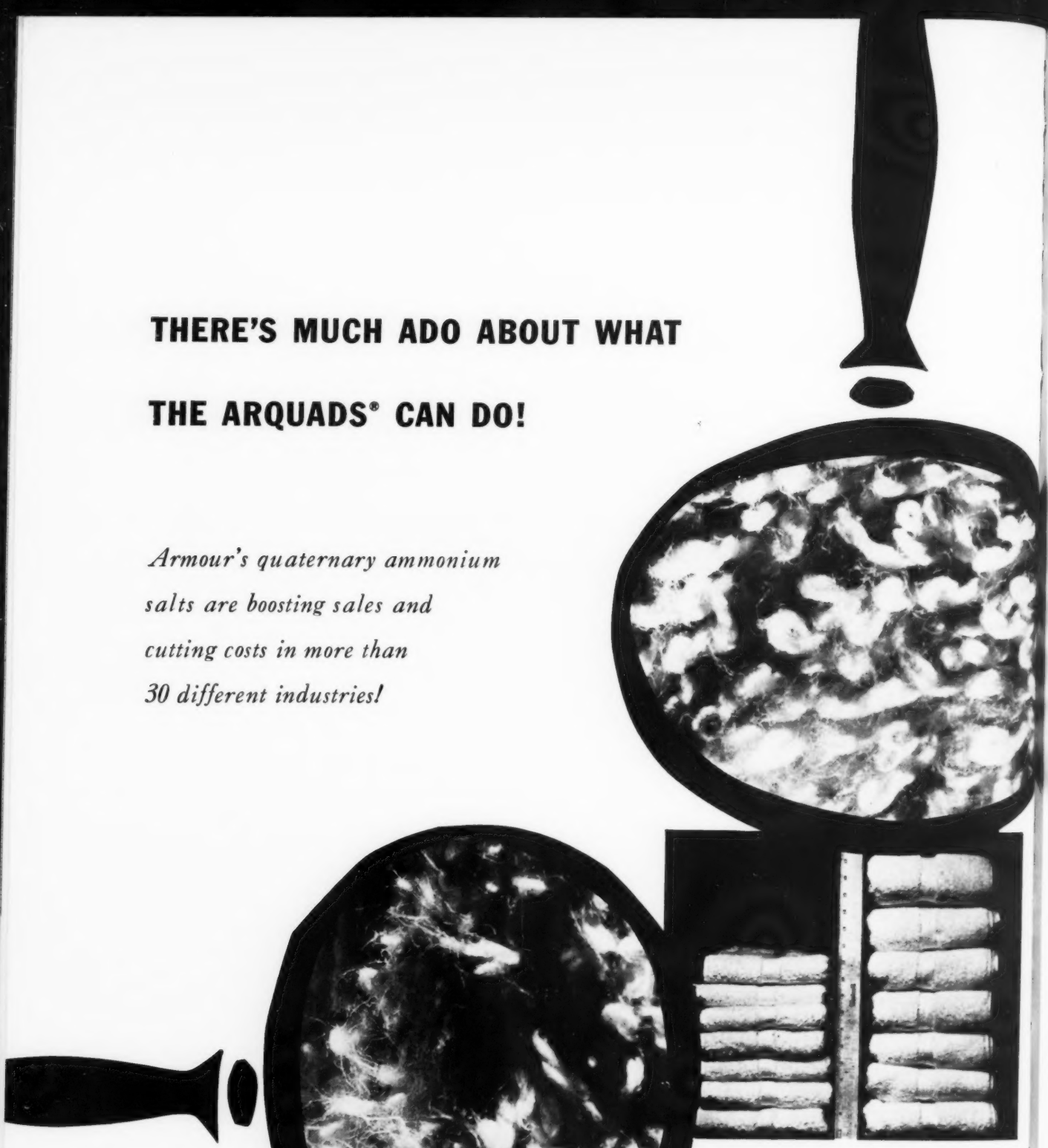

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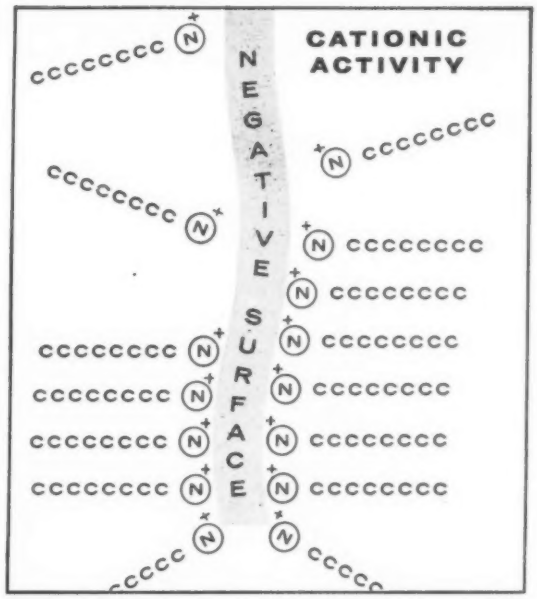

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Polyethylene in Specialty Polishes

By Robert Rosenbaum and Ralph F. Bock*
Semet-Solvay Petrochemical Division
Allied Chemical & Dye Corp.
New York

IN many types of specialty polishes, low molecular weight polyethylene will aid in overcoming production problems and/or improve the characteristics of the polish. This paper is a follow-up of an earlier one, "A Study of Property Changes Imparted to Industrial and Household Emulsion Polishes by the Addition of Low Molecular Weight Emulsifiable Polyethylene," which was presented during the 43rd midyear meeting of CSMA in Chicago in May 1957. As a result of the presentation of this paper last year and its subsequent publication in *Soap & Chemical Specialties*, specialty polish manufacturers have requested further information on the use of low molecular weight polyethylene in other types of polishes.

Low molecular weight polyethylene has higher gelling properties than many of the other usual paste polish ingredients. (See Table 1.) This allows a greater per cent of solvents to be incorporated in a polish without their bleeding. This is shown by the viscosity of a polyethylene of five per cent solids in mineral spirits or turpentine. Because there is a difference in the resulting viscosity, depending upon the method of cooling, the data for both slow cooling and rapid cooling is included, using either turpentine or mineral spirits in the formulations.

Quick cooling as referred to here involves a water-jacketed vessel having cold circulating water at 60°F. No stirring is used. Slow cooling as used here means allowing the unjacketed vessel to be cooled at room temperature, without stirring.

Table 1
Viscosity of 5% wax in mineral spirits at room temperature

	Slow cooled CPS x Gms./cc.	Quick cooled CPS x Gms./cc.
Carnauba N.C. #3	0.5	1.6
Paraffin (Sun 3420)	1.3	1.5
Oxidized microcrystalline	0.9	1.0
Emulsifiable low molecular weight polyethylene (ACP-629)	0.7	1.1
Low melocular weight polyethylene (ACP-6)	3.0	3.4
Viscosity of 5% wax in turpentine at room temperature		
Carnauba N.C. #3	1.2	1.2
Paraffin (Sun 3420)	1.3	2.0
Oxidized microcrystalline	1.3	3.0
Emulsifiable low molecular weight polyethylene (ACP-629)	1.3	2.2
Low molecular weight polyethylene (ACP-6)	2.6	5.5

The data were obtained as follows: five per cent by weight of polyethylene was dissolved in the hot solvent. After a clear solution was obtained, the temperature of the system was either quick cooled or slow cooled to room temperature of 72°F. The viscosity was then measured by a Brookfield Viscometer using a No. 2 spindle.

* Based on a paper presented by Robert E. Clark during the 44th annual meeting of the Chemical Specialties Manufacturers Assn., in Hollywood, Fla., Dec. 10, 1957.

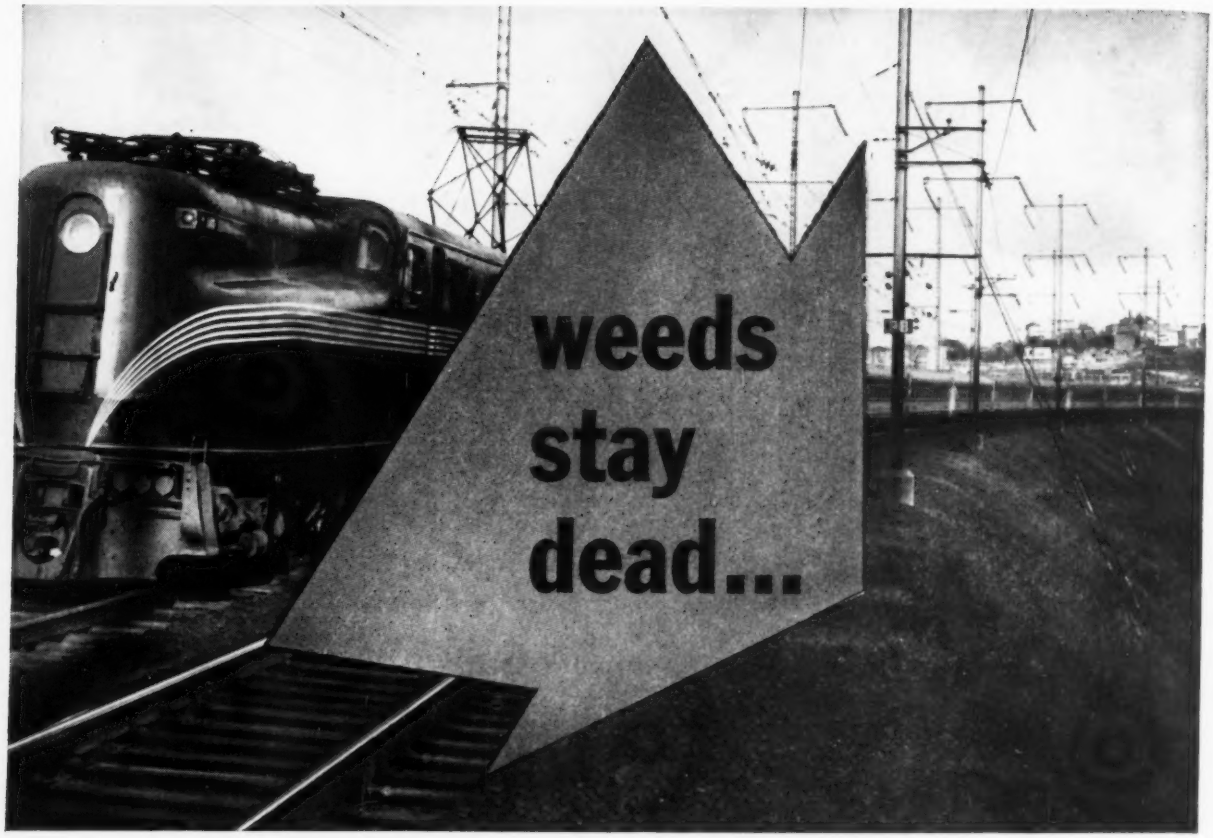

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Table 2

Solvent retention of waxes; 50% solids in turpentine at room temperature

	Paraffin (Sun 3420)	Emulsifiable low molecular weight polyethylene (ACP-629)	Low molecular weight polyethylene (ACP-6)
5-½ hrs.	....	8.0% loss	7.8% loss
30	1.4%	41.5	31.0
48	6.8	57.0	40.0
95	23.6	76.7	55.0
118	27.7	82.9	59.6
142	33.2	85.6	64.0

Solvent retention of waxes; 40% solids in mineral spirits at room temperature

	Paraffin (Sun 3420)	Carnauba N.C. #3	Montan	Low molecular weight polyethylene (ACP-6)
1 day	....	0.8%	1.0%	1.2%
2	0.4%	1.5	2.1	2.2
3	0.7	1.9	2.7	2.8
4	1.0	2.3	3.6	3.5
7	2.2	3.6	5.9	5.3

Table 1 shows five per cent solids in mineral spirits at room temperature both quick cooled and slow cooled. Also shown in the table are five per cent solids in turpentine at room temperature, both quick cooled and slow cooled. Note that the viscosity of the low molecular weight polyethylene is almost twice that of the other materials tested. This same viscosity relationship holds for both rapid cooled and slow cooled and for both turpentine and mineral spirits.

The solvent retention (Table 2) of low molecular weight polyethylene is, as one would expect, not as great as that of the other materials. Normally, solvent retention and gelling are opposite, that is, a good gelling material will have poor solvent retention. The formulator must compensate for this fact either by using materials with exceptional solvent retention such as paraffin or by the use of slower evaporating solvents.

Table 2 shows a comparison of solvent retention of paraffin, emulsifiable low molecular weight polyethylene, and low molecular weight polyethylene (A-C Polyethylene 6) in solvents. Our test procedure is to dissolve the material to be tested in the hot solvent. The solution is then adjusted to the desired solids content and cooled to room temperature. The weight sample is left uncovered. The sample is weighed at given intervals over a period of several days and the per cent loss is calculated.

The comparative solvent retention data using 40 per cent solids in mineral spirits and 50 per cent solids in turpentine appears, too, in Table 2.

The replacement of carnauba by low molecular weight polyethylene in a paste polish formulation, as shown in Table 3, results in a much higher set point, improves "in the can" appearance and should improve production by allowing a higher pouring temperature.

The 100 per cent carnauba paste polish could be buffed after drying, whereas the polishes containing the higher percentages of

Table 4

Low molecular weight polyethylene (ACP-6)	2.5
Silicone (500 CPS.)	1.5
Mineral spirits	9.6

Viscosity — Brookfield viscometer #2 spindle, room temperature

	Increasing speed	Decreasing speed
3 RPM	400 CPS.	360 CPS.
6	230	210
12	127	112
30	55	50
60	34	..

	Low molecular weight polyethylene (ACP-6)	Oxidized microcrystalline
Gloss before buffing	63	61
Gloss after buffing	70	67

low molecular weight polyethylene and using these particular cuts of naphtha and turpentine had to be buffed before completely dry. This difficulty is overcome by using small percentages of ozokerite or microcrystalline. This point will be covered in more detail under Table 9. The unique gelling properties and thixotropic nature of "A-C Polyethylene"* are easily demonstrated. (Table 4). These are best illustrated in a solvent—polyethylene—silicone formulation. This formulation showed no settling in a month, whereas a comparable formula using an oxidized microcrystalline, similar to many commercial polishes on the market, settled out in only a few hours. This stability of the polish is due to higher viscosity and also the thixothropy imparted by the low molecular weight polyethylene. This latter property also promotes ease of application. The gloss

* Registered trade name of Semet-Solvay Petrochemical Division, Allied Chemical & Dye Corp.

Table 3

Low molecular weight polyethylene (ACP-6)	0%	25%	50%	75%	100%
Paraffin (Sun 3420)	14	14	14	14	14
Carnauba N.C. #3/ Low molecular weight polyethylene (ACP-6)	16/0	12/4	8/8	4/12	0/16
Naphtha	47.8	47.8	47.8	47.8	47.8
Turpentine	22.2	22.2	22.2	22.2	22.2
Set point °F.	112	123	135	148	Indefinite
Gloss	25	32	32	25	25
Pouring temp. °F.	117	136	144	156	158
Appearance	Dull	Glossy	Glossy	Glossy	Glossy

Table 5

Set point determination

°F.	Viscosity
170	0.75
160	0.75
150	0.80
140	1.00
130	1.30
126	1.50
124	1.50
122	1.60
121	2.00
120	2.60

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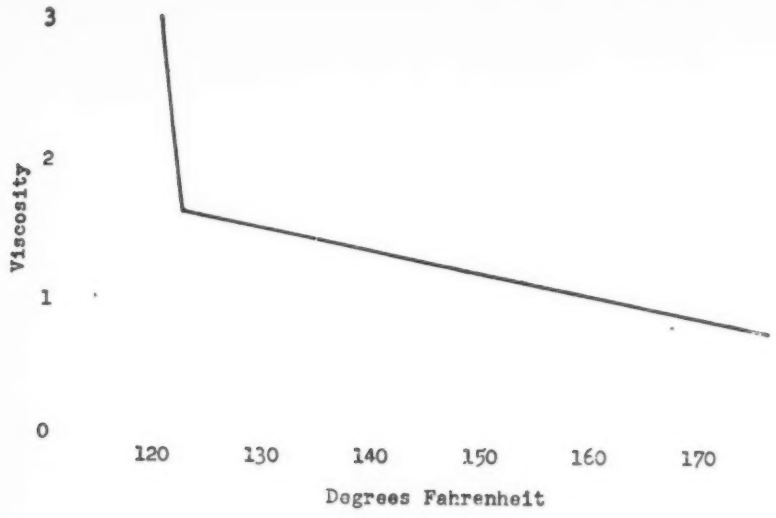

Figure 5

readings on the silicone-solvent polishes also show an advantage with the low molecular weight polyethylene.

The set point of polishes was determined by recording the viscosity of the polish as it cooled. The graph is plotted viscosity vs. temperature. The sharp break in the curve is then called the set point. This is demonstrated in Table 5 and Figure 5.

Commercial Paste Waxes

THREE different polishes were purchased locally in the Buffalo area for these tests. The solids content was determined and to a portion of each commercial polish 10 per cent low molecular weight polyethylene was added. The low molecular weight polyethylene was dispersed in mineral spirits in order that the solids content of the polishes would remain unchanged. See Table 6. Set points were obtained as previously described. These polishes were then applied uniformly to sections of linoleum and buffed with a commercial buffing machine. Gloss readings were then taken with a 60° head Gardner Glossmeter.

The consistency of the polish in the can was judged by feel. A "plus" means the addition of 10 per cent low molecular weight polyethylene increased the firmness of the polish. An "O" means no change. In two of these cases, the consistency of the paste was firmer.

The set point of each polish was raised by the addition of 10 per cent low molecular weight polyethylene. This would increase the pouring temperature and shorten the cooling time thereby increasing production. Incidentally, one company was able to shorten their cooling cycle 50 per cent by using "A-C Polyethylene 6" in paste polish. The gloss of the polishes, for all practical purposes, is equal. There was no noticeable application difference.

Auto Polishes-Cleaners

THREE commercial automobile polishes and cleaners were obtained locally in the Buffalo market. (Table 7) 10 per cent of the low molecular weight polyethylene was added based only on the wax solids. Two of these polishes contained abrasives and no set point could be obtained by our method. Where set point could be determined it was raised by addition of polyethylene, example Polish F. To measure the gloss, the polishes were applied uniformly on a metal panel and then buffed by hand. There was no difference in application or buffing properties after the addition of 10 per cent low molecular weight polyethylene. It should be noted that the gloss was improved in every case.

Shoe Polish

THREE commercial paste shoe polishes (Table 8) were bought in the Buffalo market. As in the case of the other polishes, 10 per cent low molecular weight polyethylene based on the wax solids was added. Gloss was measured

(*Turn to Page* 223)

Table 6
Floor Paste Polishes

	Control		10% ACP-6 Added		
	Set point	Gloss	Set point	Gloss	Consistency
Floor paste polish A	106°F.	33	116°F.	30	0
Floor paste polish B	110	33	117	30	+
Floor paste polish C	108	34	115	33	+

Table 7
Car Polishes

	Control		10% ACP-6 Added		
	Set point	Gloss	Set point	Gloss	Consistency
Car polish D	....	20	....	27	—
Car polish E	....	21	....	26	+
Car polish F	122°F.	19	137°F.	27	0

Table 8
Shoe Polish

	Control		10% ACP-6 Added		
	Set point	Gloss	Set point	Gloss	Consistency
Shoe polish G	109°F.	50	124°F.	55	0
Shoe polish H	111	57	117	55	+
Shoe polish I	112	37	129	53	0

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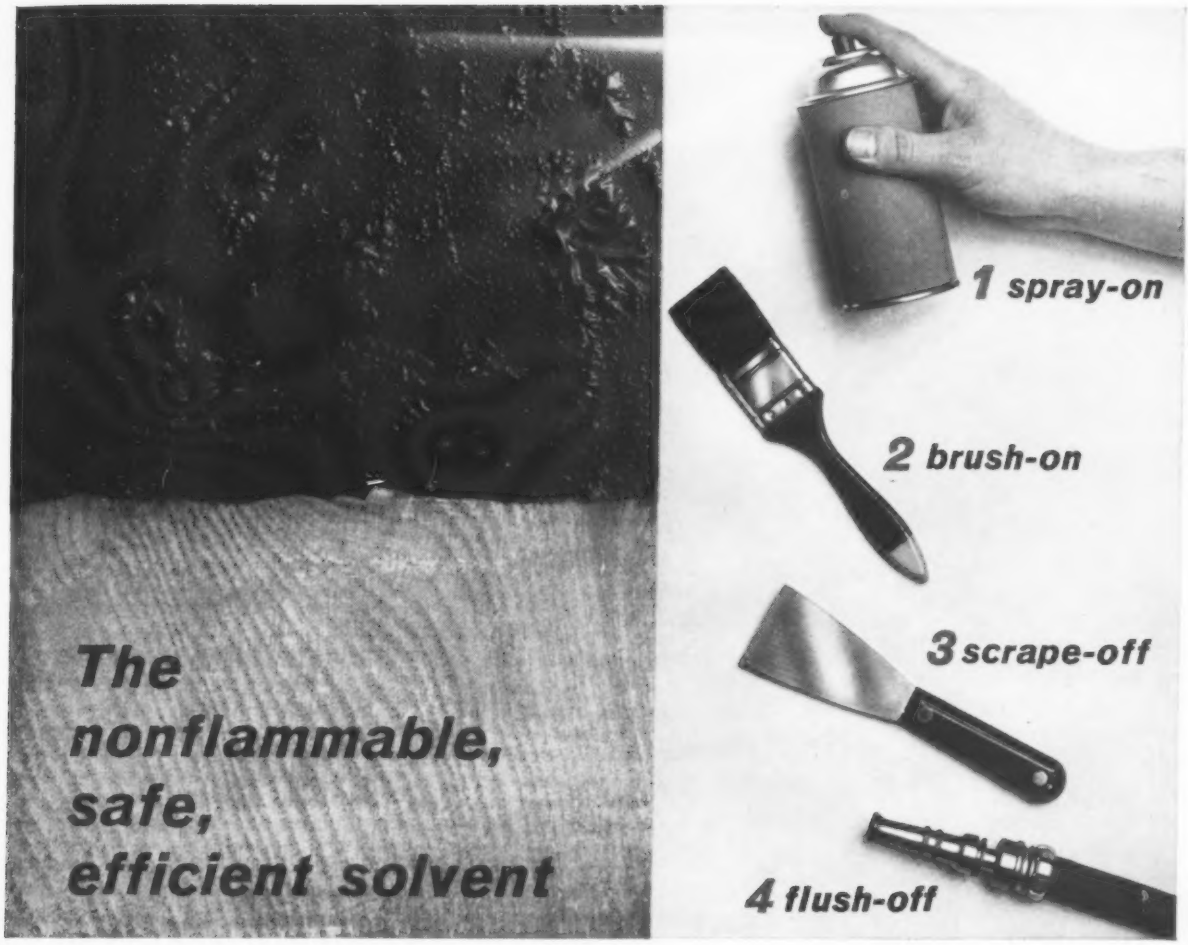

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Allied Chemical

Butcher Polish Co.

New industrial line just announced as part of comeback effort by America's first floor wax maker. Founder's grandsons lead drive aimed at regaining prestige of 78 year old firm.

FOUNDER: Charles Butcher, who began it all.

SPARKED by the energy, imagination and merchandising and promotion skills of two of the grandsons of the company's founder, Butcher Polish Co., Malden, Mass., is making a game fight to recover some of the glory (and profits) it once knew. Latest manifestation of its intent to expand the comeback it has been experiencing in the past four or five years, was the introduction last month by Butcher of a new line of industrial waxes and polishes. The innovation was marked by a flourish more dramatic than the preceding prosaic sentence indicates.

Actually, the 78-year-old New England wax maker, which claims it made "the first floor wax in America," cast aside its usual reticence and blossomed forth with an eight-page orange and black insert in the February issue of *Maintenance & Sanitary Supplies* magazine to announce the new line and explain the program to support it.

William S. Butcher

The insert, prepared by one of the top advertising agencies, N. W. Ayer & Son, Inc., Philadelphia, appeared in the issue of the magazine distributed just prior to and at the 35th annual convention and trade show of the National Sanitary Supply Association at the Coliseum, New York.

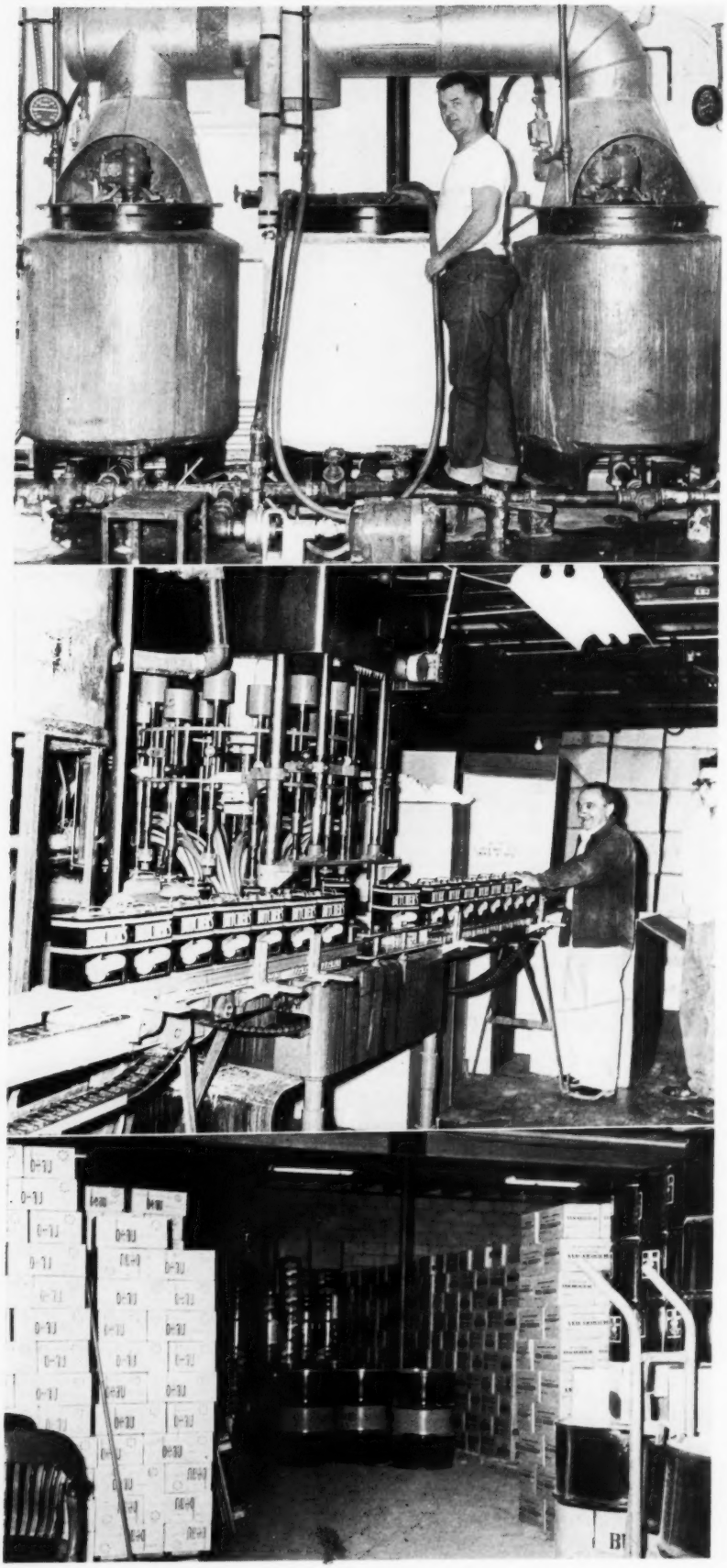
It is through members of this industry, sanitary supply jobbers, that Butcher plans to distribute its new industrial line. If the effectiveness of the insert may be judged by the number of sanitary supply distributors visiting the Butcher booth at the NSSA trade show then it may be termed extremely successful. Such an advertising splurge is unusual for a chemical specialty firm and possibly for that reason alone may have induced many jobbers to investigate.

The new Butcher industrial program features six points. First, its new line is said to be competitively priced. Secondly, and this is something of a departure, the line is packaged in five-gallon drums only. No more 55s. Says Butcher, "Without price penalty, you can offer drum-size users the added convenience of smaller-size units — a can for every floor, easier handling and storage, less pilferage." The third point involves the use of lithographed drums that are "modern, attractive and colorful. . . ." Limited distributorships is the fourth point of the program. In addition to protected territories, there will be no direct selling by its salesmen, says Butcher. Special promotions with "substantial incentives" is point five and effective sales assistance is the final feature. This includes working with jobber salesmen, the availability of catalog sheets and mailing pieces. Butcher will participate in consumer industrial shows with "dramatic" exhibits as part of its aim of providing sales assistance.

The rejuvenation of Butcher may be traced back to 1951, the year in which Charles H. Butcher, son of the founder and father of Charles Butcher II, currently executive vice-president, died and his son joined the company. Two years later, in 1953, William S. Butcher went with the company, becoming vice-president in charge of production. William's father, the other son of the founder had been treasurer, until his death in 1952.

Probably another milestone

Charles Butcher, II



in the company's history occurred shortly after the two cousins, Charles and William took over and decided to move the firm's operations from Boston to Malden, Mass. At the new home of Butcher, on Commercial St. in Malden, production facilities were expanded, and in 1955, additional warehousing space of 6,000 square feet and new tank storage facilities were added.

For 70 years, the sale of Butcher's floor wax was strictly a horse-and-buggy operation. Sales were small and the product hardly known outside of the New England and Chicago areas. But, during the past five years, young blood, the third generation of Butchers, have breathed new life into the old business. The old firm, founded in 1880, has come alive. Sales have jumped sharply during the past three or four years. New plant facilities have been added, production increased, and new products introduced.

The $300,000,000-a-year at retail floor wax industry of today had its inception in a horse barn in Cambridge, Mass., sometime during 1880, as an off-shoot of the lumber business. It was here that the original Charles Butcher first decided to produce a wax product for finishing floors as a business instead of a sideline. He commenced to manufacture a product that Butcher believes turned out to be the first commercially produced floor wax in America. The original customer of the product, a local hardware store, ordered a dozen cans. Not exactly a fast mover, the dozen paper-labeled cans took over three and a half years to sell.

The inventor of the product, Charles Butcher, was born in Norwich, England. At the age of 16, in the traditional method of seeking a fortune, Butcher ran away

Captions

Top: Kettle room at the Butcher Polish Co. plant in Malden, Mass.

Center: Filling water emulsion wax in one gallon cans for household use.

Bottom: A section of the Butcher warehouse.

Captions

Top: Shipping clerk loads filled cans of Butcher paste wax into cartons for shipping. Conveyor belt at extreme right brings cans up from floor below.

Center: Hope machine fills paste wax into cans. After they have been filled, cans are capped and are carried to floor above for shipping.

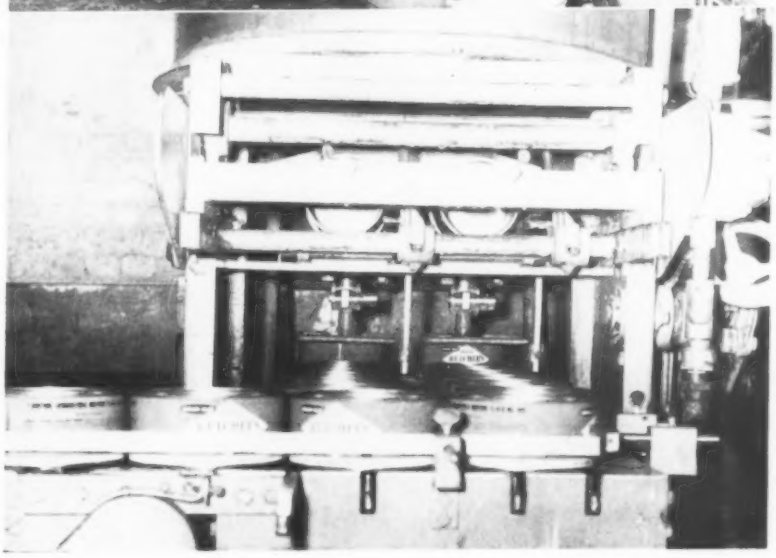
Bottom: Exterior of Butcher Polish Co. plant and headquarters in Malden, Mass. Company moved to these new and expanded quarters shortly after grandsons of firm's founder came into the business.

from home and boarded a ship in Liverpool, England. Originally he planned to sail to Australia but finding no ship destined for that continent, he came instead to the United States, arriving here in 1861.

Like many immigrants, Butcher landed in New York penniless and secured his first job as a dishwasher. Later he followed the harvest across New York State and finally arrived in Toledo, where he became a traveling salesman for a lumber concern selling hardwood floors. On a trip through New York State in 1873, Mr. Butcher was left stranded in Batavia when the firm in Toledo failed.

While in Batavia, Butcher met another lumberman named Laramy, and, from him, learned the carpentry trade. He also secured a wife, marrying Mr. Laramy's daughter. Eventually, Butcher and his family migrated eastward and settled in Cambridge, Mass., in 1878. Here, Butcher set himself up in business by "hiring a room with power, and commenced making floors on my own account."

While hardwood parquet floors, chiefly oak, had been known in Europe since the fifteenth century, they did not develop on a large scale in the United States until late in the nineteenth century. Neither the craftsmen nor the tools were available to the original colonists, who settled for roughly cut log floors. The first step forward for the colonists was the introduction of the whipsaw, which allowed them to saw hardwood logs into wide planks.



Hardwood floors as we know them today did not develop until the invention of power machinery in the late 19th century. Until this time, the flooring industry remained a part of the lumber industry; hardwood flooring strips were cut and installed by individual carpenters. While always popular as a flooring material, hardwood floors were expensive, lacked uniformity, and were not available on a commercial scale.

In 1885, the introduction of the flooring matcher made possible the commercial output of side-matched flooring strips. This made the large scale production of tongue and groove flooring strips practical and made possible uniformly laid floors. By 1900, the hardwood flooring industry became separated from the lumber industry, and hardwood flooring became readily available at reasonable prices.

While hardwood flooring use increased, methods of finishing it remained trade secrets of the individual carpenters who installed them. Many hardwood floors were washed with soap and water and soon dried out and splintered. Certain products called "floor finishes" were recommended by carpenters when they installed flooring.

One such concoction consisted of a quart of stale beer, a handful of common salt and a tablespoon of "spirits of salt," which was boiled for 15 minutes.

Another old formula consisted of a pint of spirits, seed lac, gum guiacum, dragon's blood and gum mastic. This formula was heated, strained and mixed with linseed oil.

John H. Snow, Jr., (left), merchandising manager for Butcher, and Samuel B. Peskin, sales manager, examine test floor in plant following application of one of the new Butcher industrial floor finishes.

Mr. Butcher used a traditional European formula of beeswax and turpentine, which he recommended for floors he had installed. The classic polishing method was to rub the waxed floor thoroughly and hard with "skaters" wearing felt boots. Butcher was recommending such a formula as early as 1870, but the product tended to be sticky.

While laying a hardwood floor for a man in Toledo, Butcher ran across a new type "gum" that was used in the rubber industry. This "gum" proved to be effective in reducing the tackiness of Butcher's floor polish. The new "gum" was carnauba wax.

Barn First Factory

USING his barn at his home in Cambridge as a factory, Butcher began to manufacture the first floor wax commercially around 1880, when he and two partners, Alfred Stone and Theophilus G. Smith formed the Butcher Polish Company. The partners put up approximately $1,000 for the venture. The firm was incorporated in

(*Turn to Page* 117)

Novel feature of new line of industrial floor finishes introduced last month by Butcher Polish Co. is packaging in five gallon pails only.

PETRONAUBA H

Bareco's emulsifiable wax for floor polishes

- A NEW HIGH IN GLOSS
- UNSURPASSED FOR HARDNESS
- EASY EMULSIFICATION
- PRODUCED BY SYNTHESIS FRACTIONATION OXIDATION

FREE

TECHNICAL BULLETIN!

SAMPLE!

State your product and requirements

CHECK THESE PETRONAUBA H SPECIFICATIONS:	
Melting Point	195°F. Min.
Penetration @ 77°F.	1/3
Color	Yellow (4 NPA Max.)
Acid Number	15/25
Saponification Number	50/60
Viscosity @ 210°F.	175 Max.

BARECO WAX *Company*

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332 So. Michigan Ave., Chicago
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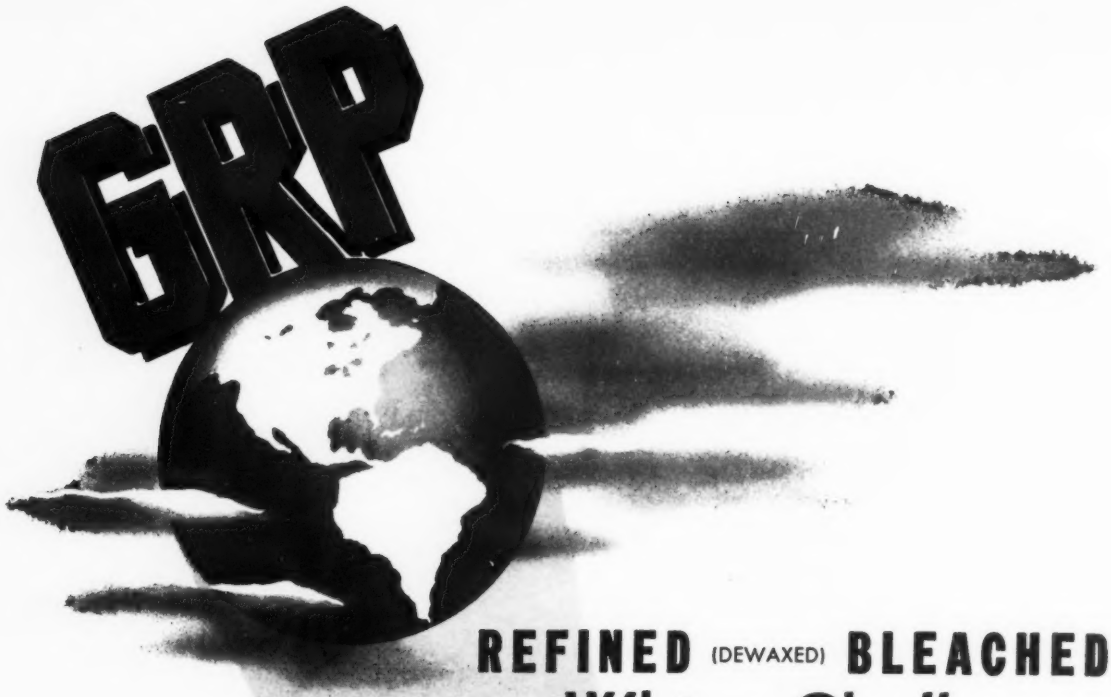

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Butcher Polish Co.

(*From Page 114*)

April, 1883.

Not receiving any return on their investment and seeing that Butcher was interested more in the technical aspects of the business than in profits, the two partners sold their interest in the company to George E. Ryder, who became an equal partner with Butcher. Butcher subsequently recorded that his arrangement with Ryder was wholly satisfactory, for he stated that "as the goods had become pretty well known, we ran along smoothly for many years – I being content to let Mr. R. do the office work and myself do the manufacturing." The first recorded sales were for the year 1887 and amounted to just over five thousand dollars. By 1900, when the flooring industry separated from the lumber industry, the firm had sales in Hawaii, Oregon and California, with net sales amounting to $36,000 for that year.

Butcher's interests ranged beyond the lumber and floor wax business. He patented a disappearing horse-hitching post, a post hole digger and a type of pre-fabricated wooden flooring. Hardwood strips were cemented to a canvas backing and then rolled up and transported to the site of installation. Here the canvas was glued down much like present day linoleum. The only invention that Mr. Butcher failed to patent was his wax polish.

At the death of Mr. Ryder, his son, Everett T. Ryder, took over his father's interest and position with the company. Young Mr. Ryder was too conservative and, as Charles Butcher was "getting a fair income, I kept to manufacturing and used my spare time Bowling on the Green and Curling on the Ice instead of at the office." The business slowed to a standstill.

Charles Butcher died in 1916. In 1917, various members of his family, including the two sons of the founder, Charles H. and William L., purchased the interests of Everett Ryder so that, for the first time, the Butcher family owned all the company stock.

Charles H. Butcher became president of the company. Having joined his father in the business rather than go to college, Charles learned the business by experience. In 1914, the company, employed four men, one of whom was Charles. Sometimes he went on the road to sell post hole diggers, but mostly he stayed at the factory.

William L. Butcher became treasurer of the firm. As a graduate of M.I.T. with a degree in engineering, William became active in the firm after the death of his father. One of his moves was to relocate the Butcher Polish office in downtown Boston.

In the early part of the twentieth century, a new liquid wax was added to the Butcher line. During the late 1920's, a gadget, the "Everyday Polisher," was designed for applying this liquid polish. The device was sold by a team of 50 demonstrators and 10 salesmen. When the Depression curtailed sales in 1929, this sales force was cut to a single man who handled the Chicago area.

In the early 1930's, self-polishing waxes were introduced. They were added to the Butcher line in 1938 and, by 1949, this type of wax was outselling their old standby – paste wax.

The floor wax and polish industry is growing at the rate of 12% a year (in dollars), according to the latest census bureau reports. Aiming to make themselves felt in this growing industry, Butcher has brought in outside personnel, so that, today, the company is under young and aggressive management. The average executive today is under 40 years of age. Such changes have brought definite results to Butcher Polish, for they have more than doubled their sales in the past three years. With such young management, Butcher Polish Company has come a long way from the early days of the horse barn and is fast returning to an important position in the floor wax and polish industry.

With the passing of Charles H. Butcher in 1951 and his brother William in 1952, the third generation of the family moved into the picture. Mrs. Gretchen C. Butcher, wife of Charles, Sr., was elected president of the concern. Charles Butcher, II, son of the former president, was elected executive vice-president and William S. Butcher, son of William L., was elected vice-president in charge of production.

First Home: The barn behind Charles Butcher's home in Cambridge was the first manufacturing plant of the company.

NEW AMP FLOOR WAX EMULSIONS

Develop Water Resistance Fast!

Cost Less!

A new method for using 2-Amino-2-methyl-1-propanol in floor wax emulsions, developed by CSC's Research Department, has opened the way for a greatly improved product. The new method consists of slightly reducing the AMP content and incorporating aqua ammonia. The result: wax with excellent water resistance which develops very rapidly after the wax film is laid down.

In addition to the rapid development of water resistance with the new AMP-ammonia formulations, considerable savings in costs may be expected since less AMP is required. Other performance characteristics of the AMP-ammonia formulations such as shelf-life, freeze-thaw resistance, leveling, and gloss were fully equal to the best commercial formulations.

Proved By Performance Tests

In a series of tests, the new AMP-ammonia formulation attained "excellent water resistance" in less than *two-thirds the time* required, and at *one-third the cost for amine* when compared with a typical formulation using morpholine. A new technical data sheet describing these and other tests made with typical commercial formulations is available on request.

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Charles Butcher, II, was born in Cambridge in 1916 and was graduated from Harvard with a BS in Economics. Before joining Butcher Polish in 1951, he worked as a printing salesman.

William S. Butcher was born in Cambridge in 1922. He was graduated from Harvard with an AB degree in Geology. In 1951, he received a Ph.D. in Oceanography from UCLA. Before joining the company in 1953, he worked as a marine geologist for the Woods Hole Oceanographic Institute.

One of the first steps taken by the new management was to move the operations to the new site. Current manufacturing operations in the Malden plant follow a gravity flow principle. Bulk raw materials are carried to the third floor by conveyors. Solvents and other process chemicals are stored in the new tank room – available for storage are a 5,000 gallon tank, a 1,500 gallon tank, a 1,000 gallon tank and three 275 gallon tanks. From this storage area, the chemicals are pumped to the third floor. Here, in the processing room, waxes are melted in steam-jacketed kettles and initial processing begins. The materials then flow down to the intermediate room on the second floor where further processing occurs. From here, self-polishing waxes are sent to storage facilities while paste waxes descend to the basement for immediate filling.

All packaging operations are carried on in the basement. After filling, the containers are returned to the first floor by conveyors to the cartoning department and storage warehouses on the first floor.

Among the many products manufactured by Butcher today are both paste and liquid solvent waxes, retail and industrial liquid type waxes of the self-polishing type, a floor cleaner and wax stripper, penetrating seal and wood preservative, a car cleaner and polisher, a furniture polish and applicator-polisher-scrubber device.

Automobile Wax and Polish Production—1956

	——units——		—bulk—
	20 ounces and less	over 20 ounces and less than five gallons	five gallons and over, expressed in gallons
A. Liquid Form			
1. Pre-wax cleaner	3,805,624	143,424	8,291
2. Polish and cleaner—No wax content	9,486,519	142,684	1,739
3. Combination cleaner and wax	1,393,583	31,319	7,320
4. Liquid wax for automobiles	1,736,275	51,824	2,388
5. Chromium cleaner	2,944,874	30,282	....
B. Paste Form			
1. Pre-wax cleaner	1,351,476	176,131	6,758
2. Automobile wax	3,725,894	77,900	....
3. Combination cleaner and wax	10,865,583	34,988	....
C. Other	68,800	8,713	740

Automotive Products Survey

Surveys covering 1956 production of automotive cooling system chemicals (exclusive of antifreeze) and of automobile waxes and polishes were released recently by the Chemical Specialties Manufacturers Association. The surveys were conducted by CSMA's Automotive Products Division. Figures are based on reports by 23 CSMA member companies, who were asked to report only products actually compounded by themselves and not materials purchased in bulk and compounded by someone else.

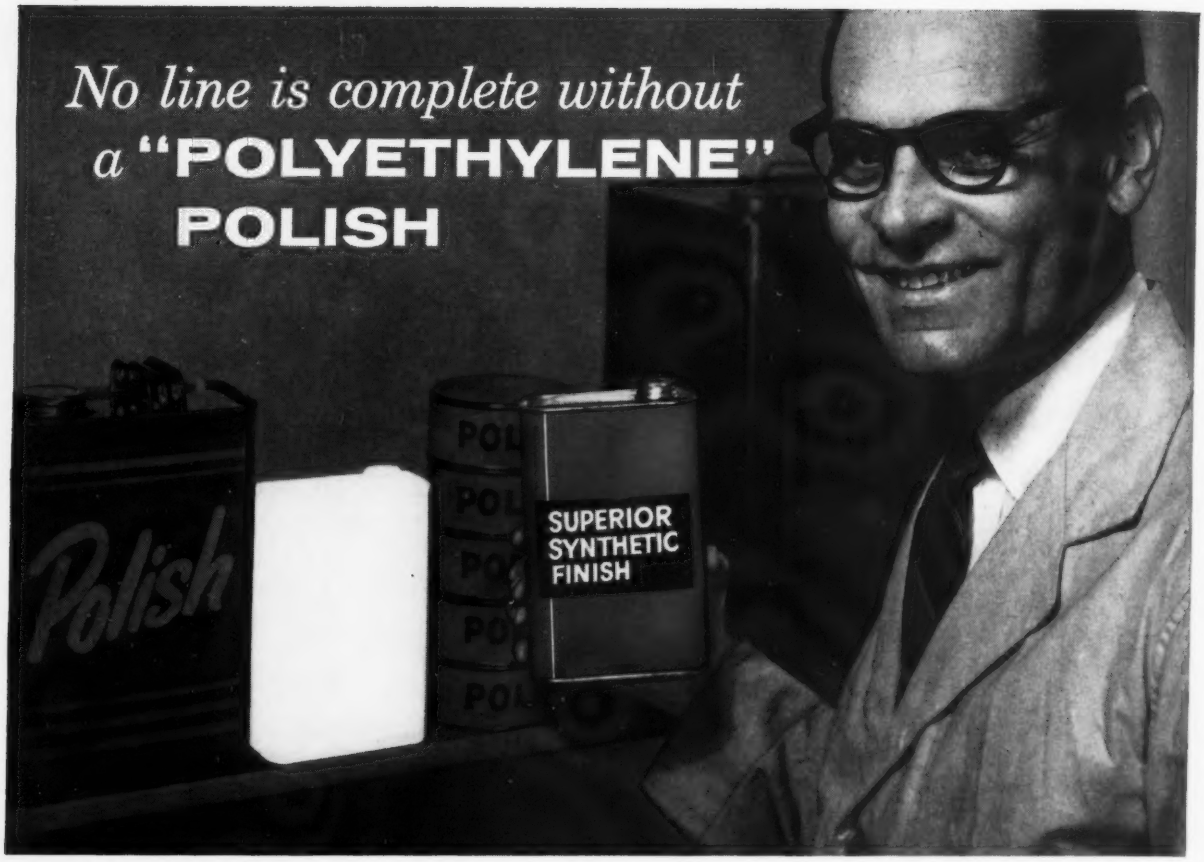
About 4,600,000 consumer size units of cooling system cleaners were produced in 1956, enough to treat eight per cent of the 60 mil-

(*Turn to Page* 210)

Three of five new aerosol products which are being introduced through supermarkets and grocery stores throughout the U.S. by Strouse, Inc., Norristown, Pa. Known as "Camette" brand, they are packed in six-ounce Crown "Spra-tainers." Cans are decorated in pastel colors, appropriate for product packaged. Plastic caps are of matching colors. Valves are by Precision. Line includes: "Zesty Spice" (left) and "Fresh Pine" room deodorants; "Spray Set" hair spray and "Old Lilac" (extreme right) and "Old Lavender" sachet mists.

Production of Automotive Cooling System Chemicals—1956
(exclusive of antifreeze)

	Number of units (single treatment, consumer size)
Cooling System Cleaners	
1. Dry-form, two phase (cleaner and neutralizer)	1,840,171
1. Dry-form, one phase	469,864
Liquid form	2,368,989
Cooling System Sealers	
1. Liquid form, except block sealers	8,894,377
2. Dry form, except block sealers	1,080,055
3. Heavy Duty and block sealers	1,217,892
Cooling System Inhibitors	
1. Dry form	580,211
2. Liquid form	1,136,793
Combination Water Pump Lubricant and Rust Inhibitor	6,600,532 (plus 42,449 gallons of bulk liquids)



The "Polish Maker's Polyethylene" plugs the hole in your profits...

Emulsifiable A-C® Polyethylene

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- Best Polish Characteristics
- Stable Price and Ample Supply

Paste or liquid, don't wait any longer to get on the synthetic polish profit bandwagon! The many superior characteristics of polishes formulated with A-C Polyethylene are now well known throughout the industry, and a ready-made market awaits your product. Polishes containing A-C Polyethylene show increased durability, gloss and noh-slip properties. Water spot resistance, improved performance under wet-traffic conditions, flexibility, and buffability are other premium characteristics attainable with A-C Polyethylene.

Big Production Benefits

A-C Polyethylene is compatible with other materials used in polish manufacture. You can prepare fine particle size, stable emulsions and concentrates in formulations containing as much as 56% solids, with your present equipment. Available in any quantity, at a stable price, this polymer solves the fluctuating market conditions inherent in dependence on natural waxes. Sales offices and warehouses are located throughout the United States. Write for information today!

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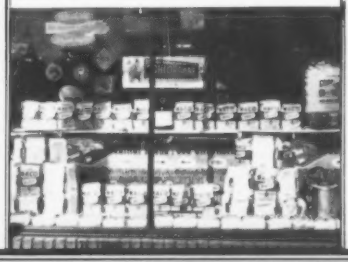
For dealer sales increases like this . . .

sales up 60%

sales up 30%

sales doubled!



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THE 1957 CHLORDANE CONTEST proved beyond doubt that displays increase insecticide sales at the dealer level. The 1958 "Show and Sell" Contest will enable you to get your products into mass displays in hundreds of stores, without extra cost or selling time. Dealers will receive free display materials, with instructions on how to incorporate these materials into mass displays of their own design. The contest will be heavily promoted through trade advertising and direct mail. Your distributors' salesmen will receive incentive bonuses and cash prizes. Participating dealers will also receive the full benefits of Chlordane's 7 point "Sales-Builder" program. All that you need to do is to keep your salesmen fully informed, so that they can make sure your products are featured in contest store promotions. Be the first to make full use of this valuable selling tool! Send for complete information today!

CONTEST FACTS! 35 PRIZES FOR DEALERS! 7 DAY PARIS VACATION FOR TWO, 4 OTHER NATIONAL PRIZES, 30 REGIONAL PRIZES! SALES INCENTIVE BONUS AND CASH PRIZES FOR DISTRIBUTOR AND FORMULATOR SALESMEN! PRIZES AWARDED FOR BEST STORE PROMOTION UTILIZING 5 CASES OR MORE OF CHLORDANE INSECTICIDES, MAINTAINED FOR TWO CONSECUTIVE WEEKS BETWEEN APRIL 1ST AND JUNE 30TH!

MAIL THIS COUPON TODAY FOR COMPLETE DETAILS!

CHLORDANE America's most popular household, lawn and garden insecticide!

VELSICOL CHEMICAL CORPORATION
330 East Grand Avenue, Chicago 11, Illinois SCS-38

Please rush full details about the 1958 Chlordane "Show and Sell" Contest, plus details on the complete Dealer and Distributor SALES-BUILDER programs.

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IT'S HERE!

A New "Hard Water" Quaternary Germicide!

The newest addition to the Rohm & Haas HYAMINE family gives you high germicidal activity in hard water. HYAMINE 3500, when used in 200 ppm solution, is an effective bactericide in water up to 550 ppm hardness (32 grains per gallon).

HYAMINE 3500 is new and different. It is a 50% aqueous solution of a selected, never previously available blend of alkyl dimethyl benzyl ammonium chlorides. It is an effective germicide, sanitizer and deodorant . . . is safe to use in recommended dilutions . . . possesses only a mild odor . . . is clear, light in color . . . and is compatible with non-ionics and many detergent builders.

Want a sample of new HYAMINE 3500 for testing purposes? Need formulating help on your liquid or powdered sanitizers? Mail the coupon today!

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Table I. Comparison of Results of Antifreeze Corrosion Tests on Metals in Automobiles and the ASTM Glassware Corrosion Test

Milligram Loss per Specimen

Formulation No.	Copper		Solder		Brass		Mild Steel		Cast Iron		Aluminum	
	Lab	Auto	Lab	Auto	Lab	Auto	Lab	Auto	Lab	Auto	Lab	Auto
1	10.1	13.1	10.8	98.4	5.4	8.8	2.3	10.3	12.0	1.0	3.9	6.3
2	9.3	5.9	1.4	19.0	2.8	3.9	17.4	5.2	58.5	109.2	9.3	86.2
3	5.4	4.3	5.5	30.9	1.0	22.5	1.0	77.9	37.6	301.0	3.3	192.4
4	9.5	11.0	7.3	11.4	4.8	7.4	1.7	0.4	1.0	0.7	3.3	1.1

Antifreeze Corrosion Testing

(*From Page* 98)

that this was the result of the soft metals being placed in a high velocity stream. To date, a maximum loss for an acceptable antifreeze has not been established.

The corrosion information obtained in this manner has been found to be particularly valuable in our research program. Very often a potential inhibitor or additive shows sufficient merit in laboratory tests to be of interest but a full scale fleet test cannot be justified. By using this method, additional information can be obtained under service conditions at minimum cost without removal and sectioning of equipment.

Data obtained from this test method has been compared with laboratory corrosion data from a 28-day test developed at Wyandotte Chemicals Corp. Inasmuch as this test is not in general use and there is insufficient data for comparison with the ASTM Glassware Corrosion Test, it is not presented in this paper. Data have been taken and compared with the more generally used ASTM test. For the sake of example, data are presented on four experimental antifreezes which were tested by the ASTM 1384-55 T laboratory method and the described specimen holder in fleet test cars. This comparison will merely demonstrate the range and type of corrosion and the correlation existing between test methods.

In this test, four cars of the same manufacture were selected, the radiators cleaned, the devices installed and a different experimental antifreeze placed in each car. The cars were sampled at the start and periodically thereafter. Laboratory corrosion tests were made by ASTM D 1384-55 T Glassware Corrosion Test Method. The data obtained are tabulated in Table I.

The automotive data for Formula No. 1 show only a high solder loss. This high solder loss was not indicated by the laboratory test. Formula 2 shows a high loss on cast iron and aluminum. The lab test indicated a high cast iron loss on brass, steel, cast iron and aluminum, with only cast iron showing high by the ASTM test. Formula 4 was very satisfactory by both the lab and automobile tests.

In Table II, the analytical data are presented for the experimental antifreezes. The data for the initial sample, taken shortly after filling and the final sample taken at the conclusion of the test, are shown.

From the corrosion data obtained from the automobiles, it was decided to proceed with caution on future fleet testing of Formulas 1, 2, and 3. It is thought that this information could not have been obtained without removal and sectioning of the equipment. It is possible that even this type of examination would not have detected the corrosion.

Summary

A SPECIMEN holder has been developed to hold the corrosion coupons specified by ASTM D 1384-55 T in the cooling system of an automobile between the motor block and the top radiator tank. This device has given satisfactory service and provides a means for obtaining quantitative corrosion data under use conditions which may be compared with laboratory corrosion tests. It appears to be particularly useful for antifreeze research activity where service corrosion data may be obtained at a minimum cost and effort.

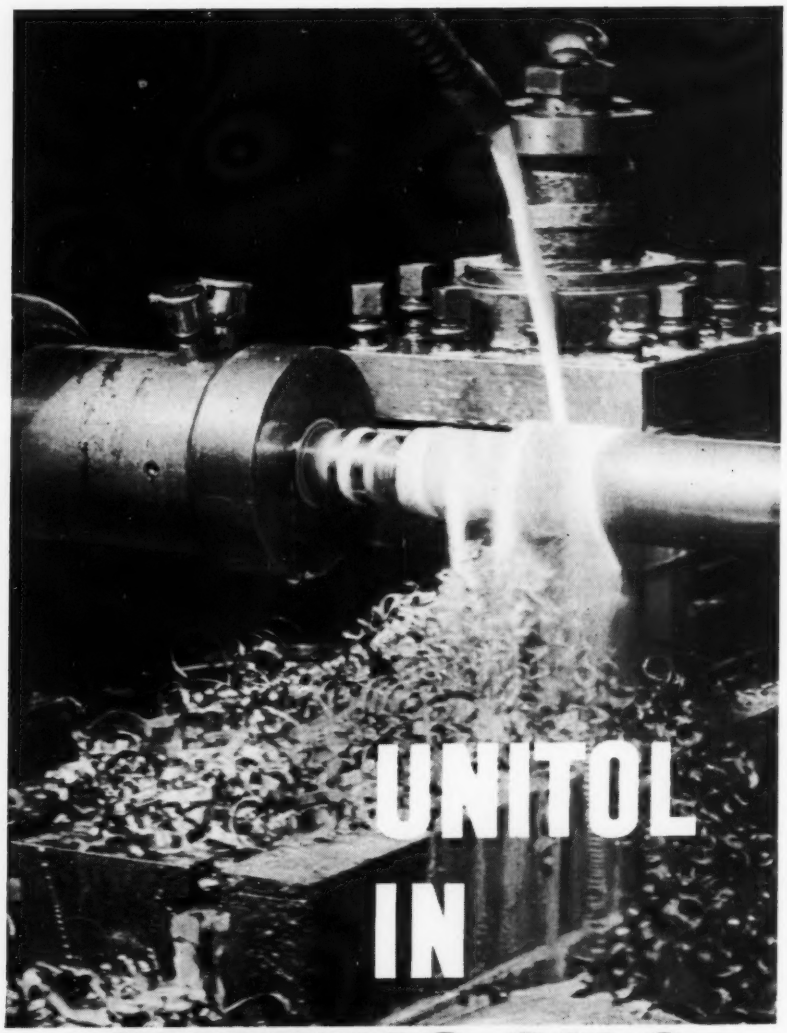
★

CSMA Publishes Revisions

Revisions of the Compilation of Economic Poisons Laws and of the Compilation of Brake Fluid

Table II. Laboratory Data of Antifreezes in Automobiles

Formulation No.	1		2		3		4	
	Initial	Final	Initial	Final	Initial	Final	Initial	Final
pH	7.30	7.42	7.30	7.85	7.75	7.62	7.38	7.50
Buffer Capacity	9.50	9.25	11.0	9.0	9.0	6.8	9.3	8.9
Freezing Point	—30	—30	—31	—26	—22	—22	—35	—32
Appearance	Cloudy	Cloudy	Clear	Clear	Clear	Clear	Clear	Clear
Aluminum	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Copper	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Iron	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Lead	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Tin	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Zinc	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil



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and Antifreeze Laws have just become available from the Chemical Specialties Manufacturers Association, 110 East 41st Street, New York. Prepared and edited by R. L. Ackerly of the CSMA counsel's office the revisions include all pertinent laws and regulations issued up to January 1, 1958. A new index, tabulation of laws and list of officials are appended to each of the publications.

Each member having an official membership copy of either compilation will automatically receive one copy of the revision free of charge. Additional copies of the seventh revision of the Compilation of Economic Poisons Laws cost $9.00 each for members, $10.00 for non-members. Additional copies of the first revision of the Brake Fluid and Antifreeze Laws Compilation cost $1.90 each for members and $2.00 for non-members. New orders for the compilation plus revision of automotive laws will be filled at a cost of $1.50 each to members and $6.00 to non-member companies.

★

New ASTM Solvents Group

Plans for formation of a new committee for the establishment of test methods and specifications for halogenated solvents were announced recently by American Society for Testing Materials. The new group, designated as "D-26," will be formally organized at the society's annual meeting to be held June 22-27.

The new committee will concentrate its work on various halogenated solvents, including chlorine, fluorine, trichloroethylene, perchloroethylene and solvent mixtures containing these materials. Subcommittees covering definitions, nomenclature, vapor degreasing, cold cleaning, test methods and industrial hygiene and safety also will be established.

ASTM previously had established test methods and specifications covering many organic solvents, including aromatic hydrocarbons, benzene, toluene and xylene.

SAACI Golf Outings

The Salesmen's Association of the American Chemical Industry, Inc., will hold five golf outings during the coming season, according to Frank R. Reynolds, Publicker Industries, Inc., SAACI golf chairman. The dates and locations of the outings follow:

Spring Brook Country Club, Morristown, N. J., May 20; Beefsteak Dinner and Golf, Dellwoood Country Club, New City, N. Y., June 26; Bonnie Briar Country Club, Larchmont, N. Y., July 22; Golf and Clambake, Tamarack Country Club, Greenwich, Conn. Aug. 19; Hackensack Country Club, Oradell, N. J., Sept. 16.

★

Warwick Wax Moves

Warwick Wax Co., a subsidiary of Sun Chemical Corp., New York, moved on Mar. 1 its sales and executive offices to a newly-constructed, ultra modern building at 750 Third Ave., New York 17. The company formerly was located at 10th St. and 44th Ave., Long Island City 1, N. Y. The move was part of a complete relocation of Sun Chemical and its affiliates.

★

Speaks on U. S. Economy

A talk on "How You Are Going to Lose Your Money," by Dr. Franz Pick, a leading authority on world currency, was the highlight of the February meeting of the Cosmetic Industry Buyers & Suppliers Association held at Toots Shor's Restaurant, New York.

Dr. Pick stated that since 1940 the purchasing power of the dollar has decreased at the rate of three per cent per year, and in order to avoid a depression this currency debasement would have to continue. He warned that should an attempt be made to stabilize the dollar then a full-scale depression would result. Although the, earnings and rate of return continue to increase, one must be realistic and measure the dollar in terms of 49 cents purchasing power.

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INSECT REPELLENTS

By Carroll N. Smith*
Entomology Research Division
Agricultural Research Service
U. S. Department of Agriculture
Orlando, Fla.

PART II

REPELLENTS provide the best protection against ticks when applied to the clothing. The initial test in the evaluation of a compound as a tick repellent at Orlando is conducted against nymphal lone star ticks [*Amblyomma americanum* (L.)] in the laboratory with a four-inch square of white cotton twill impregnated with two grams of repellent per square foot. A line is drawn across the center of the patch, which is then attached to a wire paddle and a folded strip of clean paper toweling ¾-inch wide is fastened to its lower edge. The paddle is held for one minute in a vertical position with the paper strip in contact with tick-infested hay in a small pen (Fig. 9). The ticks crawl onto the paper strip and start up the patch. The clean toweling protects the hay from contamination with the repellent, and gives the ticks an untreated starting point. Those that reach the marked line are counted, and a similar count is made with an untreated cloth, to provide a standard for computing the per cent repellency. The treated cloth is tested after various periods of aging until the repellency drops below 80 per cent. Compounds that remain effective more than five days are then tested on socks.

The legs of white cotton socks are treated with the repellent at two grams per square foot and the socks are worn by subjects standing for 15 minutes in the infested pen (Fig. 10). The feet of the socks are untreated. Ticks that crawl to the tops of the socks are counted, and per cent repellency is based on the numbers crossing untreated socks at the same time. Compounds that show at least 90 per cent repellency after more than five days of aging are carried forward to field tests.

In field tests, regulation two-piece army fatigue uniforms are impregnated with two grams of repellent per square foot, in an acetone solution or emulsion. Subjects wearing the treated uniforms are exposed in naturally infested areas for one or two hours, depending on the abundance of the ticks, during which time they alternately walk about, sit, and lie on the ground. After the exposure they remain in an uninfested location for about one hour to give the ticks time to attach, drop off, or die, according to the effectiveness of the repellent. In each test one subject wears an untreated uniform as a check. At the end of the waiting period the uniforms are removed, and all ticks on the clothing and body are counted. The per cent repellency is usually based on the total number of attached and unattached ticks remaining on the treated and check subjects.

None of the present repellents provide complete protection against ticks, but several provide more than 90 per cent protection through various periods of aging and wear (Smith and Gouck 1946, Smith and King 1950, Smith *et al.* 1954, Cole and Lloyd 1955, Gouck and Gilbert 1955, Gilbert *et al.* 1957). The best repellents for general use are Indalone, diethyltoluamide, dimethyl carbate, dimethyl phthalate, and benzyl benzoate. Undecylenic (or undecenoic) acid is more effective, but has a disagree-

*Paper presented before the 44th annual meeting of the Chemical Specialties Manufacturers Association, Hollywood, Fla., Dec. 10, 1957.

Figure 9. Tick repellents are screened by comparing the numbers of ticks that crawl across treated and untreated cloth patches.

Figure 10. Comparisons between various tick repellents are made by exposing treated socks on the feet of subjects in an infested pen.

Figure 11. Flea repellents are tested by comparing the numbers of fleas that crawl over cotton stockings worn by subjects in an infested pen.

able odor. Butylacetanilide, propylacetanilide, and isopropylacetanilide are the most effective, but the first is not approved for general civilian use, as mentioned previously, and the last two are not widely available commercially and are expensive.

The repellency of M-1960, the present military clothing treatment, to ticks is due primarily to the presence of butylacetanilide, although the benzyl benzoate and butyl ethyl propanediol are also good to fair tick repellents.

Flea Repellents

CLOTHING treatments provide the best protection against fleas, although under some circumstances it may be necessary to treat the skin also. In the present evaluation program at Orlando only those compounds that are effective in the patch tests against ticks are tested against fleas. Previously, treated patches were tested against both ticks and fleas, but results with several hundred compounds indicated that there was little likelihood of overlooking an effective flea repellent by the present system, since all the promising flea repellents were effective for more than five days against ticks.

The test compounds are applied to the legs of cotton stockings at two grams per square foot. Subjects wearing the treated and untreated stockings stand for 15 minutes in a pen infested with cat fleas [*Ctenocephalides felis* (Bouché)] or oriental rat fleas [*Xenopsylla cheopis* (Rothsch.)] (Fig. 11). The number of fleas that crawl to the knees of the treated stockings and of simultaneously exposed untreated stockings provide the per cent repellency. Treatments that show 90 per cent repellency for more than five days are considered worthy of further evaluation.

Critical comparisons of the promising compounds are made by subjects wearing stockings treated with the experimental compounds and a standard repellent in a round-robin series.

None of the repellents now available provide complete protection from fleas, but several provide a high degree of protection. The repellency of M-1960 to fleas is due primarily to the presence of butylacetanilide and benzyl benzoate. Diethyltoluamide is more effective than M-1960, and is suitable for application to the skin as well as the clothing. Undecylenic (or undecenoic) acid and propylacetanilide are also good flea repellents.

Chigger Toxicants

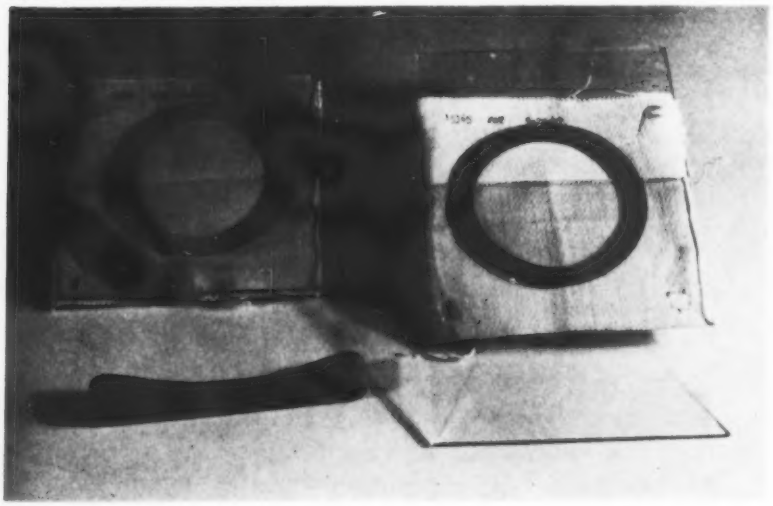
THE materials used for personal protection against chiggers (the larvae of mites of the genus *Trombicula* and related genera) function less as true repellents than as toxicants, but may properly be considered in a discussion of repellents since their function is the same.

Compounds are screened as acaricides (mite toxicants) by impregnating four-inch squares of cotton twill at two grams per square foot, placing the treated cloth on a four-inch-square glass plate, placing a rubber fruit-jar ring on the cloth, and confining five chiggers inside the ring by covering it with another glass plate (Fig. 12). Treatments that cause complete knockdown in 15 minutes are subjected to tests after various periods of aging and various numbers of washings in warm soapy water. Compounds that withstand more than two washings, or are of special interest because of their effectiveness against other pests, are carried forward to sleeve tests.

In sleeve tests, treated sleeves are attached to subjects' arms with adhesive tape at the upper margins, and the hands are placed on the ground in areas where chiggers are abundant (Fig. 13). Exposures last for from 15 to 30 minutes. The sleeves are removed and the arms examined about an hour after exposure. In each test one or two untreated sleeves are worn, and the percent protection is based on the numbers of chiggers attached to the arms under the treated and untreated sleeves.

Final evaluations of the most effective compounds are made on subjects wearing treated and untreated fatigue uniforms, who expose themselves in areas of heavy

Figure 12. Chigger toxicants are screened by determining the knockdown time of chiggers exposed in a cell on treated cloth.



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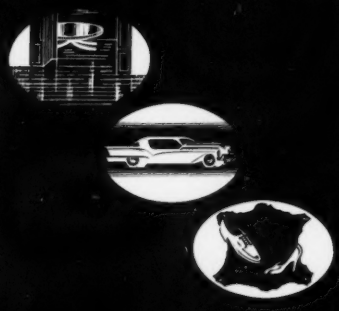

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infestation for fixed periods, and then, after a waiting period of about an hour, inspect each other for attached chiggers.

Most of the good mosquito repellents are also effective acaricides for clothing treatments; applications at two grams per square foot will provide 100 per cent protection through various periods of aging, but will not withstand washing. The most durable treatment recommended at present is benzyl benzoate, which will withstand two or three washings (Cross and Snyder 1948). M-1960, which contains 30 percent of benzyl benzoate, withstands one or two washings (Gilbert and Gouck 1953, Gilbert *et al.* 1957). This resistance to removal by water may be of importance to troops exposed to rain or obliged to ford streams.

Figure 13. Chigger toxicants are tested by exposing the arms of subjects wearing treated sleeves to natural infestations.

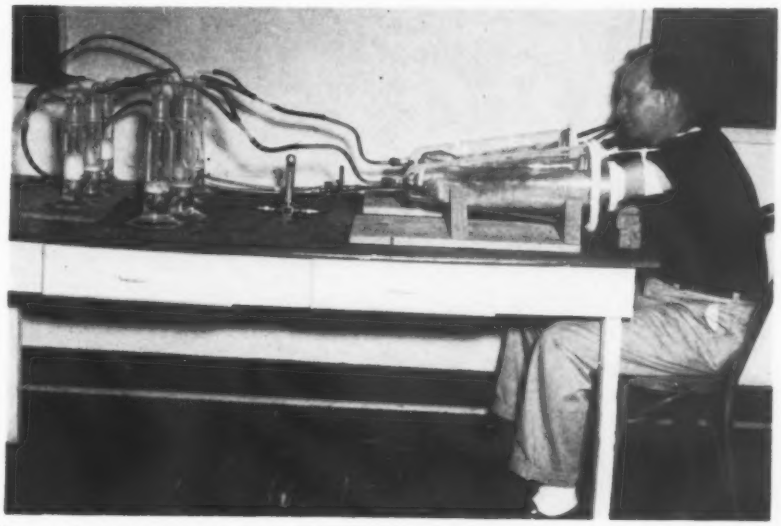
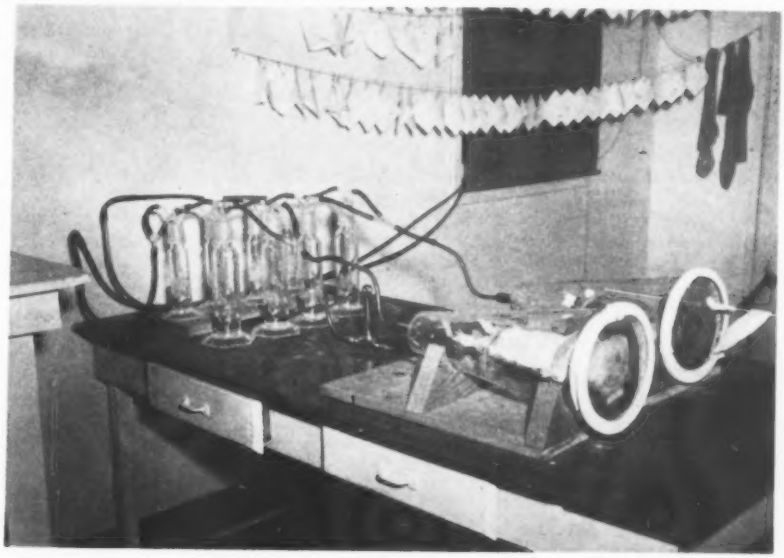


Figure 14. Air is drawn over a repellent-treated arm in an enclosed vessel, then through ethanol in gas-washing bottles, to determine the rate of evaporation.

Figure 15. The rate of evaporation of a repellent from a guinea pig is determined for comparison with that from human skin.



Action of Repellents

UNTIL recently the repellent research program at Orlando was directed almost exclusively toward the comparative evaluation of large numbers of compounds for specific practical purposes. Such a program was necessary to supply urgently needed information regarding the many compounds which had shown some promise in early screening tests. Recently, however, we have included studies on how a repellent acts and what happens to it when it is applied to the skin or clothing.

Some of the experiments are to ascertain the rate of loss by evaporation from the skin or clothing, and by absorption into the skin. To determine the loss by evaporation, a treated arm is enclosed in a glass vessel (percolator) (Fig. 14) and air is drawn at a constant rate into one end of the vessel, over the arm, out the other end of the vessel, and through ethanol in gas-washing bottles. The repellent that evaporates from the arms is trapped in the ethanol, and the amount is determined spectrophotometrically. The same device is used to determine the rate of loss from guinea pigs or cloth (Figs. 15, 16). The treated cloth is wrapped

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It won't hold for everybody, but in some applications where di- or triethanolamine is being used, there are positive advantages to be gained from switching to mono-. For example, MEA can frequently be used advantageously as the amine in amine soap emulsifiers for such products as cutting oils, weedicides, waxes and buffing compounds. In some instances total amine required is reduced to the extent that cost is reduced. In some cases mixtures of MEA and TEA are better than either alone. MEA may improve performance while TEA maintains a lower pH.

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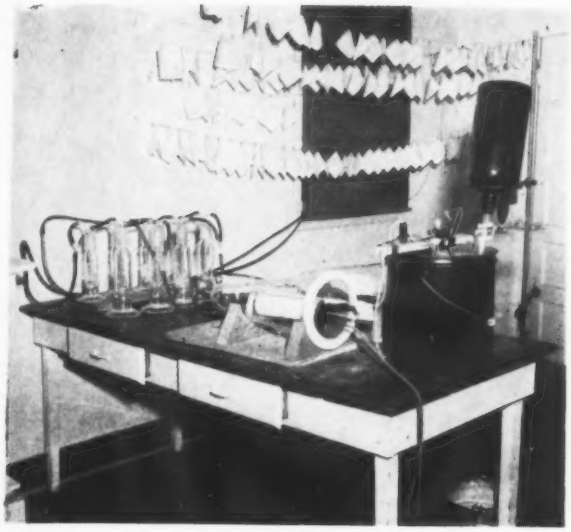


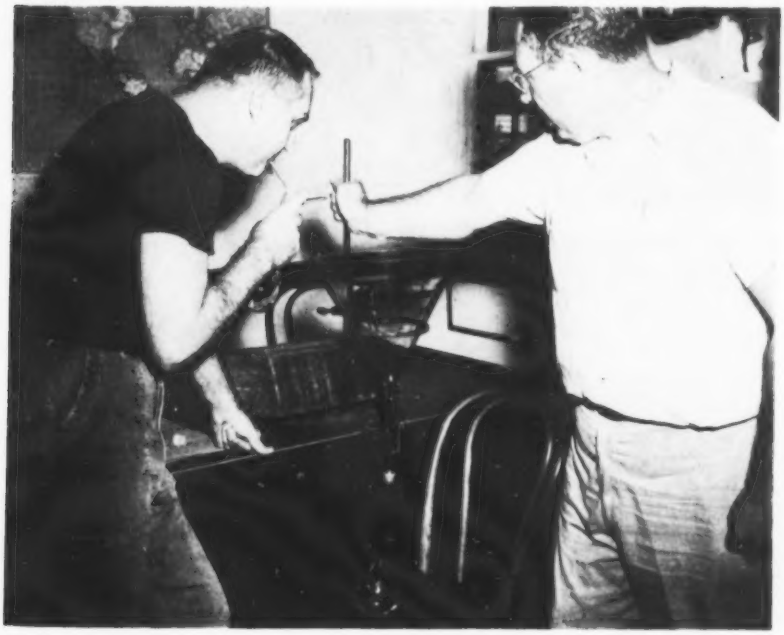
Figure 16. Treated cloth is kept at approximately skin temperature by circulating water while the rate of evaporation is determined.

around a glass cylinder, through which warm water is circulated to maintain a temperature near that of the skin. The repellent remaining on the arm or guinea pig is recovered by rinsing with ethanol (Fig. 17) and that remaining in the cloth by Soxhlet extraction. The rate of absorption is based on experiments with C^{14}-labeled repellent on guinea pigs, correlated with the data on the amount lost by evaporation, and recovered from the surface of guinea pigs and human arms.

Experiments on the action of repellents include observations of the threshold of effectiveness on the skin of human subjects with long and short protection periods as well as on membranes through which the mosquitoes feed on defibrinated ox blood, and in the ox blood itself (Fig. 18).

It is hoped that the information eventually gained from these studies and from other basic studies by other laboratories will lead to a better understanding of repellent action, and possibly point the way to that ideal repellent which is the goal of our research.

Figure 17. The repellent remaining on an arm after a given period is recovered by rinsing with ethanol.



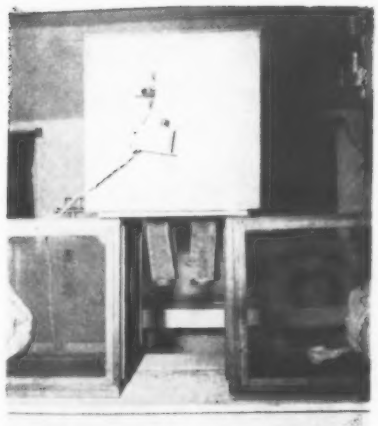


Figure 18. Mosquitoes in wire cylinders are fed through a membrane, which may be treated with repellent, on warmed blood in dishes kept inside an incubator.

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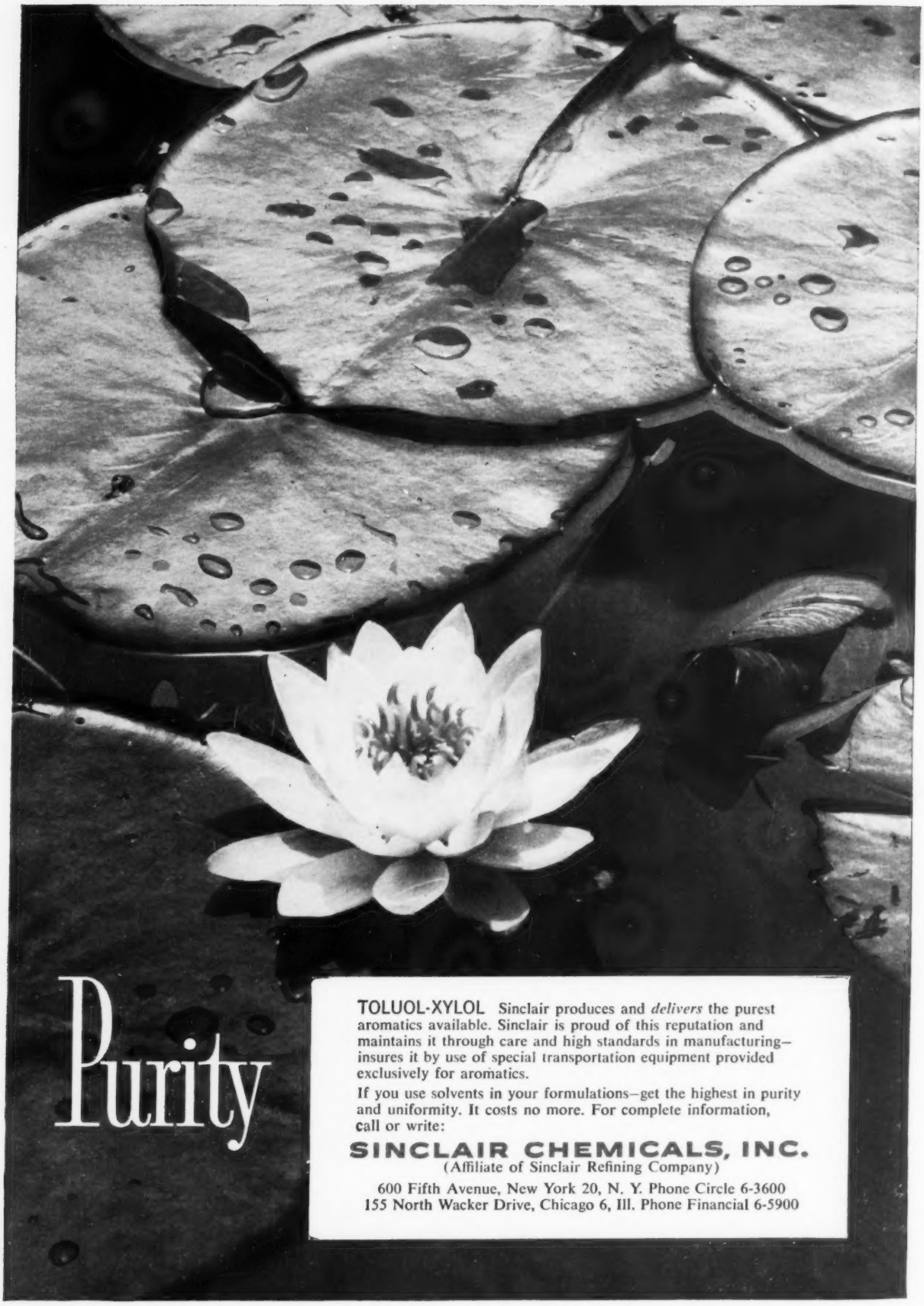

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Roach Control

(*From Page* 92)

leum > "Congoleum" flooring > glass.

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Analysis of Nonionics

(*From Page* 53)

of 10 parts per million, however, is attainable in almost all cases. The following types of nonionics have been determined using this method: phenolic-ethylene oxide adducts; alcohol-ethylene oxide adducts; carboxylic acid-ethylene oxide adducts; amide-ethylene oxide adducts; mercaptan-ethylene oxide adducts; polyethylene glycols, and polypropylene glycols. The method has a high degree of specificity and is being used to determine traces of nonionics in complex mixtures. The only known interferences are alkaloids, some quaternary ammonium compounds and some proteinaceous materials.

Summary

A REVIEW has been presented of the analytical methods and approaches available for identifying and determining nonionic surface active agents. The quantitative methods indicated cover the range from methods to determine traces of nonionics to methods for determining high concentrations.

Acknowledgment

The author would like to thank Drs. C. M. Knowles, C. E. Stevens, H. J. Stolten, B. T. Kho, and F. E. Woodward, and Messrs. F. Sullivan and J. Sugarman, all of General Aniline and Film Corp., for their comments and suggestions.

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Glycerine Outlook

(*From Page* 50)

agination will sense the increased potential for glycerine-containing surface conditioners. Back in 1950, an informal estimate was made of 24 million pounds for toilet goods and drugs taken together. This might be up to 30 million, too, by now.

A recent estimate of edible emulsifiers of the mono- and diglyceride type is 68.5 million pounds. In terms of glycerine consumed in its manufacture, this would account for some six million pounds. Here, too, the trend has no doubt been upward, and with margarine growth and population growth continuing, no change in trend is anticipated.

Miscellaneous applications, including the dozens of uses for glycerine as a humectant in parchment paper, cork crown for bottle caps, printers supplies, specialty chemicals, textile dyeing assistants and the like, figure out about 40 million pounds by difference. Growth rate in this heterogeneous group probably parallels our overall percentage of two per cent per year. The new things that have come up from time to time seem necessary to offset losses to technological change. Unfortunately, many of the more interesting uses for glycerine are of a scientific nature requiring only small amounts.

This brings us to the question of new commercial product possibilities for glycerine and its derivatives, and the channels by which they may be brought into being.

It is important to note that the development interests of those producing glycerine from propylene are not simply focused on glycerine as such, but on the entire chain of intermediate and precursor chemicals. Shell Chemical, for example, has been concerned with epichlorohydrin and epoxy resins. They have announced that, with the completion of facilities for the acrolein route to glycerine, more allyl chloride will be released for epoxys, allyl amines and other derivatives. Dow has announced a hydroxy propylglycerine plasticizer and stressed other developments in the polymer and resin field.

Large-scale availability of acrolein, expected as a result of Shell's hydrogen-peroxide-acrolein route to glycerine, suggests that some products which in the technical literature are called "glycerine derivatives" but have never been commercially manufactured may be available as acrolein derivatives in the future.

While interest in glycerine is common, exploration of deriva-

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1. When methoxychlor is combined with pyrethrins and piperonyl butoxide, the result is fast knockdown and high kill! This combination is extremely effective against flying insects and is also a potent contact killer of crawling insects.

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. . . THROUGH CHEMISTRY

tives of glycerine's precursor chemicals necessarily calls for an individual, rather than a cooperative program, as the character and cost of these precursors differ with each process. If such research suggests some development which will justify additional capital investment—particularly if it leads to a profitable specialty – the chemical producer himself may be alert to move in this direction.

Producers of glycerine as a co-product of soap and fatty acids, judging by past indications, do not have the same interest in investing new capital in derivatives to extend the glycerine market. Their concern is to dispose of glycerine, rather than to center an interrelated multi-product chemical business around it. They will probably continue to shy away from building new captive consumption by paths that require major capital expense, as distinct from such use in toilet goods.

It seems to me that these differences in areas of interest toward derivatives and applications is a healthy one for the industry, even though it has withdrawn from the association some of the former unity of attitude toward joint research.

On the one hand, we have producers ready to follow the multi-product, chemical-industry pattern of making secondary capital investments to create a captive market for a primary product in plentiful supply. They will research most thoroughly the areas of possible process application which take big money to exploit. At the same time, producers who start from fats will be concentrating their interest more on extending the familiar uses for glycerine as such which customers are already employing. They will be more concerned to stress new glycerine usage in formulations their customers can be encouraged to use. Taken together, the two avenues of development should leave no stone unturned.

Usually, when a product such as styrene is being produced by different companies, all will have about the same developmental background— and therefore offer the same areas of technical know-how to customers. By contrast, producers of glycerine from today's duality of sources offer a highly diverse research and commercial background. Our member firms cover not only fat chemistry and petroleum chemistry, but rubber, motor fuel, foodstuffs, plastics-chemistry, paper, agricultural chemistry, cosmetic chemistry and almost anything else you can mention.

Frankly, I do not think that the producers of glycerine themselves have taken full advantage of the breadth of this background, either in surveying possible areas of application, or in their technical sales service work for customers. Glycerine departments have in some cases been isolated from the main stream of the company's technology.

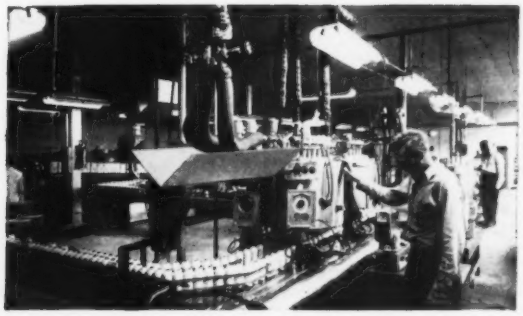
Perhaps these inner resources will not be fully exploited until the customers for glycerine—and prospects for its use—start asking their suppliers for more help on glycerine's technical possibilities in the specific fields in which other departments of today's producers are already expert. In place of the laboratory side of an association technical service program, some more effectual internal company communication and investigation, applying know-how that currently exists unlinked to glycerine, could lay the groundwork for unmatched educational service. Each month, we receive hundreds of inquiries for more facts about glycerine—in anyone of which may be the germ of an idea from which new markets grow.

1958 will not be a bad year for glycerine if we can keep implanting in fresh and uncynical minds *within* the producing companies as well as outside – the thought that (after 150 years) – the technological future of glycerine has only just begun.

New, lightweight, air-powered pump of stainless steel, made by Gray Co., Minneapolis, permits minute quantities or volume delivery of fluids direct from original shipping containers. "Graco Powerflo" pump is designed for handling liquids and semi-liquids direct from two-inch end bung of shipping drum.

Put *Your Product* Into These Pictures

Experts on Sales, Production and Testing reach a joint decision on the adaptability of a product to packaging in the modern way.



High-speed filling techniques keep supplies of your packaged products ahead of demand.

Because consumers are increasingly concerned with convenience and ease-of-use, aerosol and pressurized packaging is boosting sales for hundreds of products... from insecticides to hair lacquers... from perfumes to mothproofers... from shampoos to hand lotions... from deodorants to shaving lathers.

Let us test your product to determine its adaptability to packaging the modern way. We'll do the research in our modern laboratory at no expense or obligation to you. Then we can sit down with you for a frank discussion of exactly what facilities we have to offer in production, quality control, storage and shipping.

To put your product into these pictures, write, wire or 'phone ...you'll find it worth your while.

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Packaging . . .

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Shampoos
Shave Products
Soaps
Liquid Starch
Toiletries
and other
Chemical Specialties

A market for over 28 billion packages annually

Newly developed 55-gallon drum interlocks with adjacent containers when any number are unitized or packed closely together. Ray E. Frase (left), Signode Steel Strapping Co. and Vern I. McCarthy, Jr., vice-president, Vulcan Containers, Inc., point out special design of rolling hoops which are key to the interlocking feature of the new "Uni-Drum" container. When unitized, drums can be handled by standard lift truck. See Story Page 143.

A PACKAGING TEAM NEEDS

The package can determine the success of a product. And so important has the packaging factor become that more and more companies are making packaging decisions through *teamwork*. Specialists from various departments offer their know-how and experience. But to make a packaging team complete, it needs an outside viewpoint. It needs an Anchor Man.

The Anchor Man knows glass packaging. He's helped solve hundreds of tough packaging problems. Through this wide experience, he can help you solve yours, too.

He offers a complete line of Anchorglass® containers—amber, crystal and green—in all standard sizes and styles. The quality of these containers is safeguarded by hundreds of daily checks, tests

AN ANCHOR MAN!

and controls. You get the same high quality standards in the complete line of Anchor® metal and molded closures. And you get container-closure combinations that are best for you in every way.

Contact your Anchor Man. We know you'll want him on your team, too. Anchor Hocking Glass Corporation, Lancaster, Ohio. Branch offices in all principal cities.

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Glass Containers and Closures

whatever you **can** ...

can with CROWN Spra-tainers

For sunburn remedies or pressurized antiseptics—for literally hundreds of medicinals such as lotions, antibiotics, and inhalants—*can* with CROWN, the only source for Spra-tainers . . . seamless or fabricated.

As the originator of Spra-tainer, the disposable aerosol containers, CROWN produces more pressure cans than any other company. When you call on CROWN leadership and experience, you get packaging ideas that make old or new products pay off at retail levels.

Write for your copy of CROWN's new 3rd edition—"GUIDE TO PRESSURE PACKAGING." Crown Cork & Seal Company, Inc., Can Division, 9348 Ashton Road, Philadelphia 36, Pa.

whatever you can . . . call on CROWN

CROWN CORK & SEAL COMPANY, INC.

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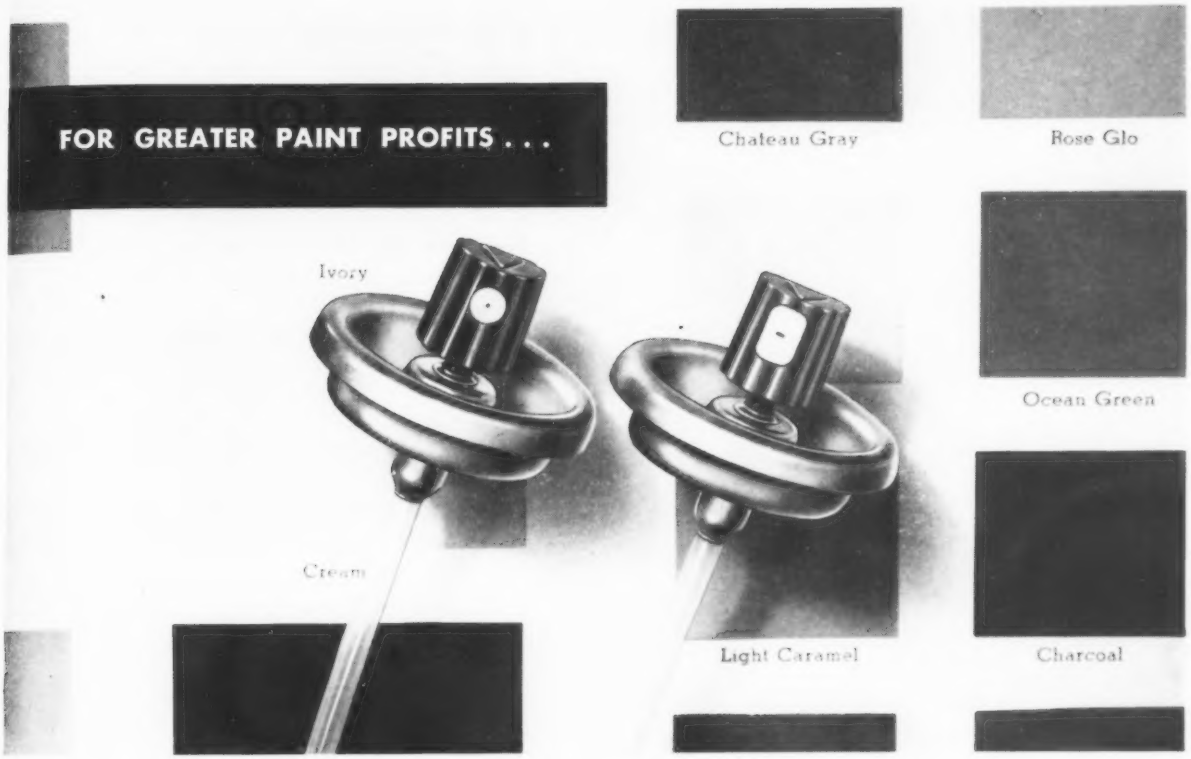
FOR GREATER PAINT PROFITS . . .



USE NEWMAN-GREEN AEROSOL VALVES TO SPEED PRESSURE FILLINGS, CUT PRODUCTION STOPS

Uninterrupted production pressure filling always increases your profits. The surest way to fill aerosol containers fast and trouble-free is to use Newman-Green valves. This simplified valve design gives you a competitive edge throughout the paint industry. Exclusive features include metering orifices in spray head that are reached easily for cleaning, a design that eliminates the sources of clogging due to a build up of paint particles, and a spray pattern that can be varied completely in seconds simply by changing the valve head only.

In addition, Newman-Green valves can be used on metal or glass containers and excessive swelling of the gasket is not detrimental to valve operation. You get especially good operations in applications of retouching paints used for autos, appliances, household equipment, etc. For full details, call us today. We take pleasure in helping you design even better packaged products for today and the future.

HOME DECORATORS SPECIAL

New spatter valve gives unusual patterns, works easily.

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Please send me your price schedule and free valve samples.

Name_____ Title_____

Company_____ Address_____

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Valve Application_____

NEWMAN-GREEN *Creative Aerosol Valve Engineering*

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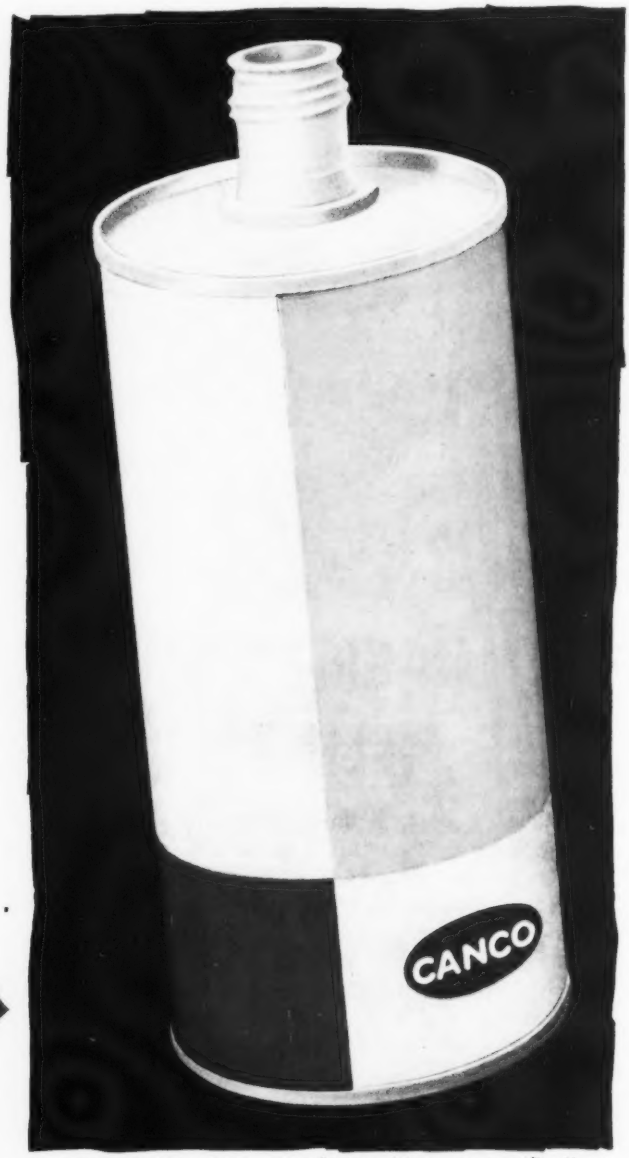
CANCO's NON-DRIP CAN

HERE'S THE PACKAGE WITH PROVEN APPEAL TO CONSUMERS . . .



A variety of plastic caps manufactured to your specifications

The sensational can for almost any liquid product . . . *perfect* for the new heavy-duty detergents! • In food stores, paint stores, filling stations, everywhere—you'll see Canco's Non-Drip Can. It's boosting sales for dozens of products and it can do the same for *your* liquid specialty! • Consider the features of this outstanding package: A clinched nozzle that pours freely, yet won't drip a drop when righted. Full decoration on top, on sides. Easy to fill, compact, lightweight, handy, unbreakable. In short, everything you, your dealers and your customers want in a modern container! • Ask your Canco representative today for details about this sales-making can and how it can serve your product!

AMERICAN CAN COMPANY

Packaging NOTES

New Crown Vice-Presidents

S. V. Tuttas and Daniel F. Sheehy have been named vice-presidents of Crown Cork & Seal

S. V. Tuttas

Co., Baltimore, it was announced recently. Mr. Sheehy also was appointed New York regional sales manager.

Mr. Tuttas, who has been director of sales for the past year, joined Crown in 1950 as Milwaukee sales representative for the Crown & Closure Division. He later became Chicago district sales manager, and in 1955 was named manager of the Crown & Closure Division.

Mr. Sheehy formerly was president of Daniel F. Sheehy Co. Associates, an automotive and transportation sales concern.

—★—

Glass Container Use Up

Glass container shipments in 1957 established a new all-time high for the third successive year, according to figures recently released by the Glass Container Manufacturers Institute, Inc., New York. Domestic shipments of new glass containers by the 40 U. S. glass container manufacturers who are members of GCMI, and representing approximately 95 per cent of the industry, totaled 8,058,960,000 units last year, compared with 7,976,592,000 in 1956, an increase of about one per cent.

Bottles and jars used in food packaging comprise the largest end use category—about 43 per cent of total shipments. Shipments of toiletry and cosmetic jars and bottles, and glass containers for packaging household specialties and industrial chemicals also contributed substantially to last year's figures.

—★—

Interlocking Drums

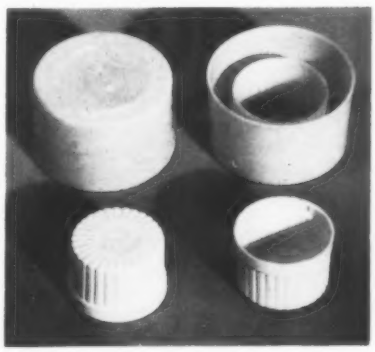
Vulcan Containers, Inc., Bellwood, Ill., recently announced a new 55-gallon steel drum which can be unitized or packed closely with adjacent containers. The "Uni-Drum" features hoops, alternately raised and lowered on opposite sides of the drum, thus permitting interlocking of neighboring drums. An interlocked group of these drums can be handled by a standard lift truck. Transit damage is said to be reduced by this novel drum design because unitized containers touch only at their strongest points and because movement of individual units is minimized.

Designed by Signode Steel Strapping Co. and Vulcan, the new "Uni-Drum" is manufactured and marketed by Vulcan. It is no more costly than a conventional 55 gallon drum and comes with a variety of closures, accessories, and linings.

—★—

New Gilbert Cap Line

A new line of plastic closures for standard aerosol containers was introduced recently by Gilbert



Plastics, Inc., 1415 Chestnut Ave., Hillside, N. J. Tradenamed "Stack Caps," the closures are constructed of polystyrene and are available in bright red, yellow, white, black, lavender and green. Additional colors can be made to specifications, and tops of the unit may be engraved with names or symbols.

Edwin D. Dodd

Dodd to National

Edwin D. Dodd has been elected vice-president and general manager of National Container Corp., New York, it was announced recently. National Container is a subsidiary of Owens-Illinois Glass Co., Toledo. He had been factories manager of Owens-Illinois' Libbey Glass Division since March, 1956. He joined the firm in 1946.

—★—

PI Awards Closing Date

A new closing date for recommendations for the 1958 annual awards of the Packaging Institute for "Outstanding Contributions to Packaging Technology," was announced recently by Roger V. Wilson, Continental Can Co., chairman of the awards committee. All entries must be received at the Institute's New York office, 342 Madison Ave., New York 17, by Apr. 1, according to Mr. Wilson.

Applications, which may be obtained from the Institute by anyone in the packaging industry, cover both the corporate and professional awards. Presentations to the winners will be made at the 20th annual forum of the Packaging Institute to be held at the

the unmistakable Ring of Quality

IN AEROSOL VALVES — You will find the clear, unmistakable ring of quality in Sun Tube Aerosol Valves. Quality bonuses, like the stainless steel spring that is double piloted to give smoother action and prevent cocking — the exclusive electronic checks of each individual valve — and the high quality standards that make it possible for Sun Tube Aerosol Valves to maintain the lowest seepage rate in the whole industry. Investigate.

IN COLLAPSIBLE TUBES — For over 30 years, Sun Tube has been synonymous with the best in collapsible tubes. This is because Sun Tube does everything within its own plants, and thus maintains full quality control of all operations from the initial tool manufacture, through metal fabrication and the handsomely decorated finished piece. Investigate.

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Edgewater Beach Hotel, Chicago, Oct. 13-15. Last year the corporate award went to Philip Morris, Inc., while the professional award was won by Karl Prindle of Dobeckmun Co., Cleveland.

—★—

Canco TV Promotion

The advantages of packaging liquid detergents in metal containers were featured in the commercials of the American Can Co., New York, on the "Douglas Edwards and the News" show recently. The program, telecast on CBS at 7:15 p.m. EST, showed Canco's complete line of light and heavy-duty, unbreakable non-drip cans. One of the main features of the new package is a clinched-type nozzle which cuts the flow of liquid when the can is righted and prevents it from spilling down the side. Canco sponsors the show on alternate Fridays.

—★—

Predicts Sales Increase

Leonard A. Britzke, president of Bradley Container Corp., Maynard, Mass., recently predicted that his firm's 1958 sales will be twice the 1957 figure. Mr. Britzke said that Bradley will produce more than 275 kinds of polyethylene tubes and bottles during this year. In addition, the company will manufacture 12 variations of the squeeze can. Recent coating and protective lacquer developments make the squeeze package applicable to an increasing variety of items, he added.

Leonard A. Britzke

Hazel-Atlas Names King

Appointment of J. Gordon King as general manager of the Hazel-Atlas Glass Division of Continental Can Co., New York, was announced last month. Mr. King, formerly was a vice-president of Owens-Illinois Glass Co., Toledo. He succeeds Harold G. Lewis, who has retired.

J. Gordon King

—★—

New Crown 15-Ounce Can

As the result of a survey which showed the need for a new size container for packaging motor oil and related specialties, Crown Can Division of Crown Cork & Seal Co., Philadelphia, has developed a new 15-ounce container called "Ful-Safe 15."

The study, which was conducted by Crown among motorists who stopped at service stations for gasoline, showed that less than half had full crankcases. Of those who needed oil, 70 per cent were prospects for oil in less than quart containers, 31.8 per cent needed a quart and one-half of oil, and 3.4 per cent needed half a quart. It was these findings which prompted Crown to develop the new container, a company spokesman said.

New Crown 15-Ounce Can

—★—

Carter Sales Up

Carter Products, Inc., New York, reported an increase in sales and a decline in earnings for the last nine months of 1957. Net sales totaled $31,433,355 compared with $30,564,471 in the corresponding period of 1956. Net income amounted to $1,000,712, equal to share earnings of $1.56. This compared with $4,512,881 and $1.76 in the final nine months of 1956.

In the last quarter of 1957, the company reported a slight decline in sales to $9,433,455 from $10,883,397 in the final three months of the preceding year. Net income totaled $1,351,449, equal to share earnings of 53 cents. This compared with $1,177,823 and 46 cents in the comparable quarter of the previous year.

—★—

Mengle in New Post

G. A. Mengle, president of Brockway Glass Co., Brockway, Pa., recently was elected a director of U. S. Brewers Foundation. Manufacturers of glass containers. Brockway provides numerous packaging services to the brewing industry.

G. A. Mengle

IMPACT adds sales punch!

IMPULSE sparks point-of-purchase buying!

IMPROVEMENT

brings you the newest in glass!

The H-A "Imps" say–

...glamour in glass!

sells cleanliness better

No matter what your product improves, it will get more *impulse* sales with greater *impact*—packaged in glass by H-A! H-A's rich, even amber, and crystal-clear flint containers come in every size and shape you need, to please your product and your customer, too. Sell *cleanliness* in a beautiful package—call or write H-A, right now!

HAZEL-ATLAS GLASS

division of CONTINENTAL CAN COMPANY

WHEELING, WEST VIRGINIA

Packaging Machinery Show Mar. 25-28

ACTIVE demonstrations and displays of the most recent advances in automatic production line packaging will highlight the 19th Packaging Machinery & Materials Exposition to be held at Convention Hall, Atlantic City, N. J., Mar. 25-28. More than 150 exhibits will occupy about 60,000 square feet of floor space at the show, which will be held in conjunction with a technical forum, sponsored by the Packaging Institute, New York.

These sessions, to be staged in Room "B" of Convention Hall, will open on Monday Mar. 24, one day prior to the official opening of the trade show. The forum will continue with a morning meeting, 9:00 a.m. to 12 noon, on Mar. 25, and will conclude with a similar session the following day.

At the initial Mar. 24 meeting to be held at 2:00 p.m., W. L. Romney, technical director - of packaging for Procter & Gamble Co., Cincinnati, will moderate a panel discussion on "Economies and Greater Efficiency Through Carton Standardization." Papers to be presented include "Problems of Making Cartons to the Close Tolerences and High Standards Demanded by Today's Higher Speeds," by A. William Chapman, Lord Baltimore Press Co., Baltimore; "Problems of the Machinery Manufacturer Introduced by Today's High Speeds," by Wickliffe Jones, R. A. Jones & Co., Cincinnati; and "Carton Standardization and Simplification from the Users Point-Of-View," by Howard W. J. Baines, E. R. Squibb & Sons, division of Olin Mathieson Chemical Corp.

William B. Bronander, Jr.

Another panel will feature the discussion of "Automatic Packaging With Polyethylene." Dr. L. E. Simerl, research and development manager of the film division of Olin Mathieson Chemical Corp., will serve as moderator. The discussion will include talks on "Today's High Speeds and Polyethylene," Charles Fields, manager of process development, Shellmar-Betner Division of Continental Can Co., Mount Vernon, O.; "Machine Developments for Packaging in Polyethylene Film — Present Problems and Accomplishments and Future Goals," by Henry Knoechel, sales manager, Hayssen Manufacturing Co., Sheboygan, Wis.; and "Opening Methods for Polyethylene Wrapped Packages—Peelable Seals, Perforated Films and Tear Tapes," by V. M. Norwood, Bakelite Co., division of Union Carbide Corp., New York.

Also to be featured at the opening session are papers by Sam Gold, manager of technical market development, adhesion division of National Starch Products, Inc., New York, on "Adhesion Promotors for Polyethylene," and by Bruce Miller, development manager of plastics, Ludlow Paper Co., on "Latest Developments in the Plastic Extrusion Field."

Dr. Frank C. Campins, president of Polymer Industries, Inc., Springdale, Conn., will open the Mar. 25 meeting with a talk on "The Structure of Performance." This will be followed by a packaging discussion featuring Lloyd Stouffer, editor of *Modern Packaging*, Chris FitzGerald, editor of *Packaging Parade* and Bruce Holmgren, editor of *Package Engineering*. The concluding portion of the second-day program will be devoted to a question and answer audience participation session. It will be moderated by A. Douglas Murphy, Esso Standard Oil Co., New York, president of Packaging Institute, and William B. Bronander, Jr., Scandia Manufacturing Co., North Arlington, N. J., president of Packaging Machinery Manufacturers Institute.

The final day of the forum will feature a paper by A. R. Schaefer, customer service manager for New Jersey Machine Corp., Hoboken, N. J., on "Packaging Machinery — The Desires of Its Buyers and Suppliers." This will precede a panel discussion on "The New Machine from Determination of Your Needs to Placing of the Order." Lowell Ledgett, manager of engineering and construction, Colgate - Palmolive Co. New York, will serve as moderator. Subjects to be discussed include "Defining and Developing Your Need for the Machine," by Edward Wixted, industrial engineering manager, Schering Corp., Bloomfield, N. J.; "Choosing the Supplier of the Machine You Need," by Fred Blumers, manager, engineering and manufacturing services, General Mills, Inc., Minneapolis; and "Specifications, The Common Language of the Order," by L. A. Curtis, vice-president in charge of sales, Package Machinery Co., Springfield, Mass.

The final event on the pro-

(*Turn to Page* 163)

A. Douglas Murphy

AEROSOL

PACKAGING

can give your sales "steamroller" power!

Here's how General Chemical can help you get started...

If you've been watching the aerosol field, you've seen product after product come out in aerosol form and roll over its competition with irresistible force.

Could *you* market an aerosol that would have similar success?

A qualified "yes"

If your products can be sprayed, brushed on, dusted or daubed, aerosol packaging may well give them that vital "push." And now's the time to get started—while the field is still growing . . . while consumers still think of convenience packaging in aerosol form as "new" and exciting.

General Chemical can help you

As the producer of "Genetron" aerosol propellants, General Chemical has the basic knowledge and specialized experience you need to get started. We will be glad to supply market information and technical data. We can tell you about promising new types of aerosol formulations developed in our laboratories. We can tell you about qualified contract fillers—who can take over the entire production job for you, from test market quantities to commercial production. The fact is, you don't have to invest a cent in special equipment or personnel to get into this profitable market!

These information services of General Chemical are available to you without cost or obligation. Why not take advantage of them now? Just call or write "Genetron" Department, General Chemical Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y.

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The right propellant for every aerosol need

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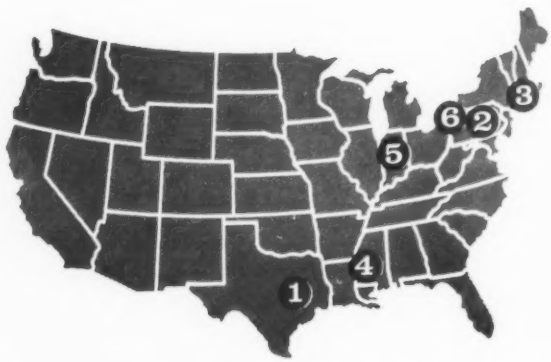
HOW PLANNED PROGRESS AT KNOX GLASS INCREASES CUSTOMER SERVICE

With an aim toward providing even better service to their customers throughout the nation, Knox Glass Incorporated has just completed a record year in plant expansion and growth. Here is a report of some of the results of Knox's nation-wide program of planned progress:

1. **Palestine, Texas:** Ground was broken in June, 1957, for a new plant to produce amber glass. It will be in operation within the next few weeks.
2. **Knox, Pennsylvania:** A new unit for the manufacture of emerald green glass containers went into operation in April; increased this plant's capacity by more than 40%.
3. **Danielson, Connecticut:** A completely new glass container plant is now under construction and will start producing a very broad line of flint glass containers this summer.
4. **Jackson, Mississippi:** An additional 50,000 square foot storage facility was added to the extensive Jackson plant to provide even better service to southern customers.
5. **Gas City, Indiana:** New and modern batch-mixing and storage facilities were completed early this year.
6. **Oil City, Pennsylvania:** Construction started on a new mould shop, designed to improve Knox's operating flexibility, in December, 1957.

If you would like additional information on how Knox can meet your needs for precision, high quality containers, write Knox Glass Incorporated, Knox, Pa., or contact your nearest authorized Knox representative.



KNOX GLASS INCORPORATED

What's New?

Pontchartrain Chemical Co., New Orleans, La., has adopted a newly-designed bottle by Owens-Illinois Glass Co., Toledo, O., for packaging its "Pine-O-Zone" pine oil disinfectant and deodorant. New package features a wrap-around four-color label with vignette-type illustrations. Pint and half-pint bottles have low centers of gravity to protect against tipping, while rounded shoulder design facilitates easy pouring. The product is distributed in the southern United States and Central and South America through brokers, wholesale grocers and overseas agents. Metal closure is also made by Owens-Illinois. Neck bands are manufactured by Celon Co., Madison, Wis., and labels by Press of H. N. Cornay, New Orleans.

New pink "Sweetheart" toilet soap, introduced recently by Purex Corp., Ltd., South Gate, Calif., is packaged in a pink metallic foil wrap by Reynolds Metals Co., Louisville, Ky. Wrapper is patterned after the blue-green foil package, introduced last year for the company's well-known white bar of "Sweetheart" soap. Purex confining its color range to pink, is in line with an over-all campaign begun last year to provide an identification for "Sweetheart," different from that of any other toilet soap.

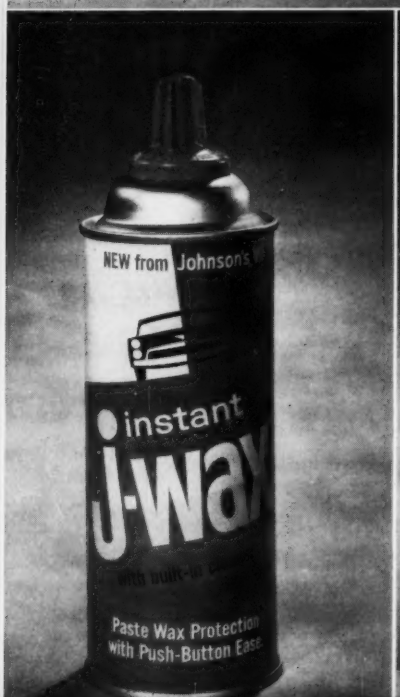
New whitewall tire cleaner, developed recently by S. C. Johnson & Son, Inc., Racine, Wis., is packaged in a 12-ounce aerosol container and retails for $1.25. Product is spread on tire surface and is said to foam on contact and provide easier, faster and more even cleaning. Johnson claims this is first white tire cleaner in pressure package. Can is Crown "Spratainer."

Flamemaster Chemical Co., Culver City, Calif., has selected a new aluminum foil label by Milprint Co., Milwaukee, for introduction of its "Metaltone" metallic decorative spray. The label features a foil-tinted stylized goblet design, which runs from top to bottom against a background of opaque white, broken only by a black, diamond-shaped design at the neck of the goblet. Instructions for use are printed in black, while caution details are printed in white on a black band at the top, and on a block of black at the bottom of the container. The product will be distributed nationally through department, paint, automotive, electronic and hardware stores. Package is by Continental Can Co., New York.

New self-polishing wax, tradenamed "Klear," recently developed by S. C. Johnson & Son, Inc., Racine, Wis., is designed for use on all types of floors. It is claimed to be resistant to water spotting and scuffing and non-yellowing to floors, even after repeated applications. Product, which recently was test marketed in New York State and New England, comes in three sizes, which retail for 55 and 98 cents for the regular and large size containers, and $1.69 for the giant-size can.

"No Noise," new rubber coat spray, recently introduced by Electronic Chemical Corp., Jersey City, N. J., is designed for use in preventing shorting, arching, corrosion, and for water-proofing and insulating electrical wiring. Product is packaged in six-ounce Crown "Spra-tainer." Valve is by Precision Valve Corp., Yonkers, N. Y.; filler: Sun-Lac, Inc., Newark, N. J.

New "Beam" oven and grill cleaner, a non-inflammable liquid spray, was announced recently by Beam Chemical Co., Oconto Falls, Wis. Product also may be used in cleaning of "Pyrex" coffee makers, griddles, toasters, broilers and chrome and stainless steel equipment. Claimed to be odorless, "Beam" may also be used to clean warm surfaces of 120 to 130 degrees. It comes in an eight-ounce polyethylene squeeze type bottle, one-gallon glass containers and five and 55-gallon steel drums.



New aerosol auto wax, claimed to clean and polish in one application, was introduced recently by S. C. Johnson & Son, Inc., Racine, Wis. Called Instant "J-Wax," the product is claimed to give a paste wax performance while removing dirt from enamel and lacquer finishes. Instant "J-Wax," also said to remove rust from chrome, and have a high initial gloss, retails for $2.50, and will be marketed through filling stations and automotive stores. It will be advertised and promoted jointly with regular "J-Wax," the company's established combination cleaning and waxing paste. New product comes in 16-ounce aerosol can. Valve is by Clayton Corp., St. Louis.

Real Kill Co., Kansas City, Mo., has adopted a new, easy-to-grip bottle by Owens-Illinois Glass Co., Toledo, and Obear-Nestor Glass Co., East St. Louis, Ill., for packaging its "Real Kill" bug killer. Bottle features a sealed-in plastic sprayer by Bakan Plastics, Kansas City, Mo., and a leak-proof protective cap. Product is distributed nationally through food chains, drug hardware and variety stores.

"Windex," liquid window cleaner manufactured by Drackett Co., Cincinnati, is now being marketed in 14-ounce aerosol container by Continental Can Co., New York. Designed to match the bottled "Windex" in color and label, the can is coated with a transparent light blue ink. The remainder of the package's printed design features a black, yellow and white label on the front and directions for application on the back in black on white. The product also comes in six and 20-ounce glass bottles.

Spray-Kleen • Products Co., Milwaukee, is now packaging its "Spray-Kleen" all-purpose cleaner in a new 12-ounce glass bottle by Hazel-Atlas Glass division of Continental Can Co., Wheeling W. Va. Bottle features a sprayer attachment by Calmar, Inc., Los Angeles, Calif., which is fitted to container by a plastic holder. Label is of red and white with four primary uses of the product — carpets, leather, upholstery and car interiors—printed on bottle front. Directions for use are printed on back in white. "Spray-Kleen" will have nationwide distribution through grocery, hardware, paint and department stores, as well as filling stations.

"Rexall" merthiolate, said to be the first aerosol antiseptic to be nationally marketed, was introduced recently by Rexall Division of Rexall Drug Co., Los Angeles. Package is filled by G. Barr and Co., Chicago, and formulated by Eli Lilly Corp., Indianapolis, in cooperation with Barr. The product which retails for 98 cents, comes in a light red, plastic coated Wheaton glass bottle with valve of matching color. Dome type cap is of transparent plastic. Spray angle of valve is relatively narrow so that spray is confined to a limited area.

New dessert topping, called "Lucky Whip," introduced recently by Lever Brothers Co., New York, is packaged in a 16-ounce Crown "Spra-tainer" by Crown Can Division of Crown Cork & Seal Co., Philadelphia. Package has full-color lithographed label with a shallow top dome and a white-molded plastic cover, which simulates a swirl of the product. Introduction of first Lever aerosol product is backed by a heavy advertising campaign.

New rust solvent and penetrant, recently formulated by Spray Products Corp., Camden, N. J., is packaged in a 12-ounce aerosol "Spra-tainer" by Crown Can Division of Crown Cork & Seal Co., Philadelphia. Tradenamed "Nuts Off Spray," product is claimed to be odorless and effective in loosening nuts and bolts and in cleaning small parts, spark plugs, battery terminals and carburetors. It is also marketed in pint and gallon containers, through jobbers in the United States and Canada.

aerosol tested spray perfumes

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schimmel

with a fresh neutral
or floral fragrance

Schimmel compounds are designed either to neutralize with a clean refreshing effect or to add an agreeable perfume odor to your spray.

Send an unperfumed sample and let Schimmel solve your masking problem.

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NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany each notice of opposition.

Texaco—This for rust inhibitor and motor detergent concentrate. Filed May 27, 1957 by The Texas Co., New York. Claims use since March, 1957.

Sunny — This for dishwashing and laundering compound. Filed June 26, 1957 by B. A. Railton Co., Chicago, Ill. Claims use since about 1951.

Penago—This for cleaning fluid. Filed by Pal-Pen Chemical Co., Carmichael, Calif. Claims use since May 10, 1957.

Nice N Ezy — This for hand cleaner. Filed July 18, 1957 by Thomas Petronio, Mamaroneck, N. Y. Claims use since Mar. 28, 1956.

Gitz — This for dishwashing compounds. Filed July 22, 1957 by Scientific Supply Co., Denver, Colo. Claims use since June 17, 1957.

G-20—This for insecticide. Filed Feb. 10, 1956 by McConnon & Co., Winona, Minn. Claims use since June 17, 1955.

Wonder — This for rinse-water additive for clothes washing machines. Filed Dec. 12, 1956 by Hotpoint Co., Division of General Electric Co., Chicago. Claims use since May 24, 1955.

Speed-D-Burr—This for rust inhibitor. Filed Jan. 11, 1957 by Speed-D-Burr Corp., Glendale, Calif. Claims use since Sept. 10, 1953.

Siposan—This for surface active agents. Filed May 22, 1957 by American Alcolac Corp., Baltimore. Claims use since Mar. 4, 1957.

Plus Fifty B—This for fire extinguisher. Filed July 10, 1957 by Ansul Chemical Co., Marinette, Wis. Claims use since May 23, 1957.

Champion—This for medicated soaps and cleaners. Filed June 15, 1956 by Champion Co., Springfield, O. Claims use since about June 12, 1936.

Lens-Brite — This for impregnated glass cleaner pad and container. Filed Mar. 7, 1957 by H. A. Sparke, doing business as H. A. Sparke Co., Shreveport, La. Claims use since June 6, 1956.

Felsol—This for all-purpose detergent. Filed July 23, 1957 by Fels and Co., Philadelphia. Claims use since July 15, 1957.

Bug Blast — This for insecticides. Filed Apr. 8, 1955 by Cenol Co., Chicago. Claims use since about May 1, 1948.

Black Hawk—This for insecticides. Filed July 24, 1956 by Quinn Drug and Chemical Co., Greenwood, Miss. Claims use since 1943.

Laton—This for non-slip coating for shoes. Filed Jan. 23, 1957 by Laton, Inc., Merrick, N. Y. Claims use since Sept. 17, 1956.

Parispray — This for room deodorant. Filed Apr. 3, 1957 by Robert W. Gabler, doing business as The House of Gabler, Chambersburg, Pa. Claims use since Mar. 20, 1954.

Thioneb — This for fungicide. Filed Apr. 5, 1957 by U. S. Rubber Co., New York. Claims use since Mar. 6, 1957.

Diamond Black Leaf—This for insecticide. Filed June 13, 1957 by Diamond Black Leaf Co., Cleveland. Claims use since Sept. 17, 1956.

Fuma Sol—This for rodenticide. Filed June 19, 1957 by American Chemical Paint Co., Ambler, Pa. Claims use since Apr. 25, 1957.

Jus-Rite — This for laundry starch. Filed July 29, 1957 by Potter-McCune Co., McKeesport, Pa. Claims use since April, 1950.

Phaltan — This for fungicide. Filed July 17, 1957 by California Spray-Chemical Corp., Richmond, Calif. Claims use since May 22, 1957.

Lady Lennox — This for shampoo. Filed July 24, 1957 by Norman W. Siebras, doing business as Lady Lennox Co., Memphis, Tenn. Claims use since Mar. 17, 1932.

Sak—This for combination soap and cleanser. Filed Dec. 31, 1956 by Plunkett Chemical Co., Chicago. Claims use since Nov. 26, 1948.

Nu Bol — This for toilet bowl cleaner. Filed Jan. 22, 1957 by Rita L. McInnes, doing business as King Manufacturing Co., Flint, Mich. Claims use since Nov. 28, 1956.

Apex—This for fire extinguisher. Filed June 19, 1956 by British Fire Extinguishers, Ltd., Toronto. Claims use since Apr. 9, 1956.

Space—This for room deodorant. Filed Nov. 28, 1956 by Shulton, Inc., Clifton, N. J. Claims use since Oct. 29, 1956.

Gordon's—This for insecticides. Filed Mar. 15, 1957 by Gordon Chemical Co., Kansas City, Kans. Claims use since Mar. 1, 1949.

Vapon — This for shampoo. Filed Dec. 7, 1956 by Vapon, Inc., Montclair, N. J. Claims use since July 26, 1927.

Imperial — This for shampoo concentrate. Filed May 1, 1956 by Helene Curtis Industries, Inc., Chicago. Claims use since Mar. 29, 1956.

Fast—This for detergent for use in washing machines. Filed July 6, 1956 by Rapp-Ramsey Co., Shenandoah, Ia. Claims use since Sept. 14, 1953.

Mac's—This for whitewall tire cleaner. Filed Feb. 17, 1957 by Mac's Super Gloss Co., Los Angeles. Claims use since August, 1952.

Hyonic — This for detergents and foam stabilizers for industrial use. Filed Apr. 9, 1957 by Nopco Chemical Co., Harrison, N. J. Claims use since September, 1954.

Ni-Plex—This for metal stripping compound. Filed June 27, 1957 by United Chemical Corp. of New England, Providence, R. I. Claims use since June 7, 1957.

Javex—This for liquid bleach and stain remover. Filed Aug. 23, 1957 by Wilbert Products Co., New York. Claims use since June 7, 1919.

—★—

Monsanto in Rosin Field

Monsanto Chemical Co., St. Louis, last month entered the naval stores field with acquisition of Filtered Rosin Products, Inc., Baxley, Ga., manufacturer of gum rosin products. Complete details of the transaction were not disclosed. Included among the physical assets obtained by Monsanto are facilities at Baxley for gum collection and manufacture of gum rosin and turpentine, a similar plant at Douglas, Ga., and an Alamo, Ga., unit for gum collection.

Robert M. Morris, assistant general manager of Monsanto's organic chemicals division, has been made president of the recently acquired firm. John S. Lewis, vice-president and general manager of Filtered Rosin Products, will continue in these capacities. No personnel changes are contemplated at the present time.

—★—

New Bacteriostat for Soap

A new anti-bacterial compound suitable for incorporation in liquid soaps, shampoos, and other specialties was introduced last month by Ions Exchange & Chemical Corp., 40-50 Leonard Street, New York 13. "Agosan H-6" is a polymeric organic silver salt said to be active against gram positive and gram negative bacteria. Freedom from toxicity, eye and skin irritating and corrosive properties is claimed in addition to ease of formulation and good compatibility characteristics. "Agosan H-6" does not build up resistance in the bacterial flora. It may be used on wounds and intact skin. In addition to products for personal use the water-soluble silver compound may be used in sanitizers for household and industrial applications and has been successfully used to make surgical bandages and other materials self sterilizing. According to the manufacturer the material has passed the requisite tests.

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FUTURE
The skyrocketing sales success of aerosol packaging can be in your future with Continental Filling. No investment in plant, special equipment, or personnel when you have Continental Filling doing the quality custom filling you want. Write today . . . find out how Continental Filling can fit into your profit future.
CONTINENTAL FILLING CORPORATION
Danville, Illinois,

PRESSURE PACKAGING

Labeling Cosmetic Aerosols

Rules governing the label statement of net contents for aerosol hair sprays were clarified recently by the Food and Drug Administration. The clarification was accomplished by an exchange of letters between S. L. Mayham, executive vice-president of the Toilet Goods Association, and M. R. Stephens, director of FDA's Bureau of Enforcement. In addition the correspondence established a rule of thumb for the method of net content declaration of cosmetic aerosols in general.

Net content stated on the label of all pressure packages includes the propellant as part of the labeled content. The label declaration on all aerosols must clearly indicate whether it is made in terms of weight or volume units.

Generally speaking the choice of terms applied to the aerosol mixture should be governed by the method of measurement commonly applied to the basic product. For instance, a liquid product, such as a lotion, (without propellant) is commonly declared in terms of liquid measure. Net content of a pressure package, including lotion and propellant, must therefore also be declared in terms of units of liquid measure.

Conversely, a product (without propellant) which is usually measured in terms of weight, would call for a declaration in weight units when mixed with a propellant to form an aerosol. A typical example of this group is aerosol shave cream.

In the case of hair sprays the question is more complex, since certain types did not exist prior to the advent of pressure packaging. Total net content of these sprays may be declared in units of weight, if the material minus propellant is a solid or semi-solid. Further, if the type of hair spray did not exist before the emergence of the aerosol package and if manufacturers have uniformly labeled such products in terms of units of weight, FDA does not now object to continuation of this practice.

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Sun Lac Develops Polymer

A new water soluble polymer has been developed by Sun Lac, Inc., Newark, N. J., pressure packaging firm, it was announced last month. S. Noto, Sun Lac's chemist was not completely satisfied with some of the properties exhibited by the polymers generally available for incorporation in pressure packaged hair spray formulations. He searched for a more suitable film and his efforts resulted in the development of a novel polymer, which is said to be highly water soluble and economical in use. Formulations are said to have good shelf life and, according to Mr. Noto, the material does not present an odor problem. Toxicity tests, although not yet complete, have so far been favorable. Films formed by the resin are said to possess adequate water repellency and to leave the hair manageable.

Sun Lac, Inc., 274 Lafayette Street, Newark, is in position to supply interested parties with samples of formulations.

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New Paint Spray Valve

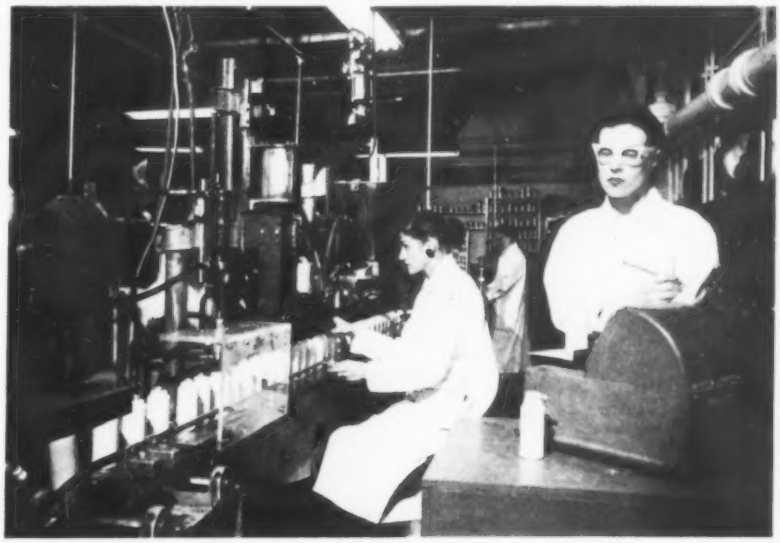
An aerosol paint valve incorporating a novel spray head was introduced last month by Newman-Green, Inc., Addison, Ill. Designed to impart a speckled or spattered appearance to the finished surface, the device is said to be especially suited to the needs of the do-it-yourself decorator of shelves, flower boxes etc.

—★—

Plasti-Kote Sales Meeting

Silver dollar awards to 12 winners of a January sales contest sponsored by Plasti-Kote, Inc., Cleveland aerosol manufacturers, were featured at the company's annual sales meeting held recently at the Drake Hotel, Chicago. The affair was attended by more than 60 Plasti-Kote representatives. According to Elias Shapiro, vice-president, the contest produced the

Operation of new nitrogen filling facilities at G. Barr and Co., Chicago, custom aerosol loader, began earlier this month with pilot production of aerosol dental creams. Production quality control on the new filling line features a pressure check of every completed package, removal of excess nitrogen from the dip tubes and purging of air from the containers. Special leak detection devices also are employed on the line to safeguard against imperfect sealings.



A DROP OR A STREAM AT THE TOUCH OF A FINGER!

with Precision's new valve and spout

FOR ANY LIQUID OR SEMI-LIQUID FOOD PRODUCT

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THERE IS NO PRODUCT DETERIORATION

The hermetic seal is maintained until the product is completely used.

THERE IS NO REFRIGERATION NEEDED

An inert propellant means no oxidation . . . the product stays as packed.

The Perfect Container for . . .

PACKAGING **DISTRIBUTING** **STORING** **SELLING**

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Precision engineers would like to show you how your product can be successfully packaged in a non-aerated pressurized container . . . The one container with built-in sales appeal. The one container with a proven impulse-sales appeal that guarantees big turnover. Inquire today on your business letterhead, there's no obligation, of course.

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highest January sales in the history of the firm.

★

New Emson Brochure

A new brochure describing its complete line of valves and aluminum and stainless steel containers was published recently by Emson Research, Inc., Bridgeport, Conn. The fully-illustrated booklet also shows cross-section drawings of the valves, and lists numerous applications for both the basic and metered valves. Copies of the brochure may be obtained from the company, 118 Burr Court, Bridgeport 5, Conn.

★

New Aerosol Capper

A new aerosol capper designed for use on aerosol bottles and cans was introduced recently by Builder's Sheet Metal Works, Inc., 108 Wooster St., New York. Utilizing a drill press for its operation, the new unit is claimed to be especially suited for use in laboratories and small production lines. It measures 12 x 24 x 30 inches and is equipped with a ¼ h.p., 110 volt AC motor. The capping device crimps down the valve edge over the outside of the bottle.

The attachment for capping metal containers is also available for use with the drill press. In this operation, the unit creates a ridge inside the cap which is larger than the can opening to prevent the cap from being blown off when under pressure.

William A. Lunger, left, president of Ohio Chemical & Surgical Co., a division of Air Reduction Co., Madison, Wis., is shown along with Stanley Smith, Cleveland plant manager, at recent opening of two new nitrous oxide plants in Cleveland. Annual production capacity of the new units is 240,000,000 gallons. Nitrous oxide is used in packaging pressurized food products such as whipped cream.

Can Man Sees Record Aerosol Sales in 1958

PRODUCTION of aerosol containers in 1958 will set a new record of half a billion or more units, according to Robert Hollister, national sales manager of pressure cans for American Can Co., New York. Mr. Hollister estimated that this year's pressure can output will be approximately 19 per cent greater than last year's record of 120 units.

"Manufacture of aerosol containers for food products this year should exceed 100 million units, compared with about 70 to 75 million in 1957," he said. Production of non-food aerosols will be about 400 million cans, up from about 350 million a year ago."

The strongest growth items in 1957 were aerosol room deodorants, shaving lather, insecticides, hair sprays and paints, Mr. Hollister said. He added that the output of pressure cans for insecticides, room deodorants, shaving lather and paints may each pass the 50-million mark in 1958 and that hair spray can production may reach 100 million units.

"The first widespread use of larger containers for paint and insecticides in 1957 met with increased consumer acceptance," Mr. Hollister said. "The popularity of the 14 and 16-ounce pressure cans indicated that many consumers want additional product quantity. This was one of the leading factors in the over-all growth in these two fields.

"It is likely that 1958 will be a key year in the development of the pressure can industry," he stated. "We expect sharply increased use of aerosols by the food industry and believe the year may see general introduction of toothpaste and shampoos in pressure cans."

He said that Canco already has developed a container for dispensing toothpaste and is also working on a pressure can that will satisfactorily hold and dispense liquid shampoo. Future development in the food industry is expected to come through introduction of new pressurized products, such as syrups, spreads, sauces, toppings and similar items, he added.

★

International Aerosol Meet

The International Aerosol Association has scheduled its first general meeting for March 17, it

was reported recently. The meeting will be held in Zurich, Switzerland. IAA is headed by G. M. Mayer of Precision Valve International S.A.

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Advice on Glass Aerosols

A few pointers for safe pressure packaging in glass containers were issued early this month by the Toilet Goods Association (Bulletin No. 3042), 1270 Avenue of the Americas, New York 20. Use of uncoated glass bottles should be confined to small aerosol units, since larger sizes present a potentially greater hazard, according to TGA. The bottle shape should be designed to give maximum strength. Square or "sharp" corners should be avoided. Uniformly correct wall thickness and strength of bottles must be insured.

"Other things being equal, the lower the pressure in the container, the lower the hazard" says the bulletin. Pressures should be at the minimum level required for efficient dispensing. The best method of filling is the one which yields highest uniformity of pressure from package to package.

Plastic coating surrounding a glass bottle reduces the hazard from flying glass if the container is broken. All precautions applicable to the uncoated bottle apply also to the coated glass aerosol. For large size aerosols coated bottles are indicated, rather than uncoated glass containers. Quality and thickness of the plastic coating must be adequate. The coating must be securely fastened to the neck of the bottle when the closure is crimped into place. The coating must be adequately vented to permit the escape of pressure in the case of breakage.

Finally, the pressure packaged product should be adequately tested to determine the safety of the package. It has been suggested that the pressure packaged product at 100°F be random dropped from a height of six feet unto a steel plate.

TGA stresses that thorough testing and study is recommended in every case, and separate study for each individual product.

Alfred Martin Dies

Alfred Martin, president and founder of West Penn Mfg. & Supply Corp., Brackenridge, Pa., died Jan. 22. Mr. Martin founded West Penn in 1931. The company manufactures metal screw caps for glass containers and aerosol cover caps. Until 1928, Mr. Martin served as vice-president and manager of C. L. Flaccus Glass Co., one of the pioneers of machine-made glass bottles. He was also active in banking, having founded the Allegheny Valley Trust Co., Verona, Pa. He was president of that organization at the time of his death.

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French Aerosol Plans

The French industry's need and desire for an aerosol trade group is currently being surveyed by means of a questionnaire, which appeared in the January issue of *Parfumerie, Cosmetique, Savons*, sponsor of the project. The following questions are raised: If you think that the different industries concerned with pressure packaging have coinciding interests, do you consider it opportune to create a group for the development of aerosols in France?

Do you believe that an insufficiently informed public is one of the main factors hampering the development of an aerosol market?

Do you consider that a literature and information center on aerosols would be useful to you?

Do you want an organization to carry out liaison with other professional and scientific bodies, trade publications, similar organizations abroad and with the authorities?

Do you think that the trade would profit from a public relations service for the distribution of news and articles dealing with aerosols to the trade press and possibly to radio and television?

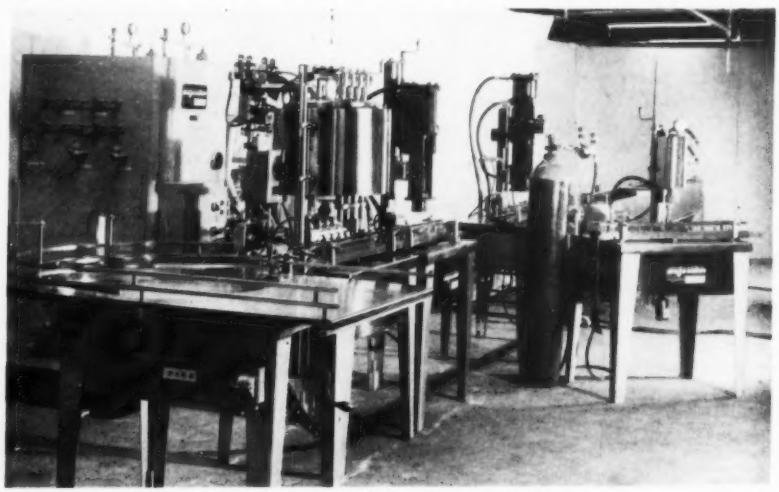
In your opinion, should such an association undertake publicity to spread the concept of aerosol and its many advantages to the public at large?

Assuming such a group is established, which form do you visualize? Should the membership consist exclusively of business organizations? Or should it be an association of specialists including all real persons interested in aerosols?

Would you join such an organization?

The questionnaire was set up by a committee of ten appointed at a meeting held in Paris late last year under the chairmanship of Rene Colson, editor in chief of *Parfumerie, Cosmetique, Savons*. This development in turn was sparked

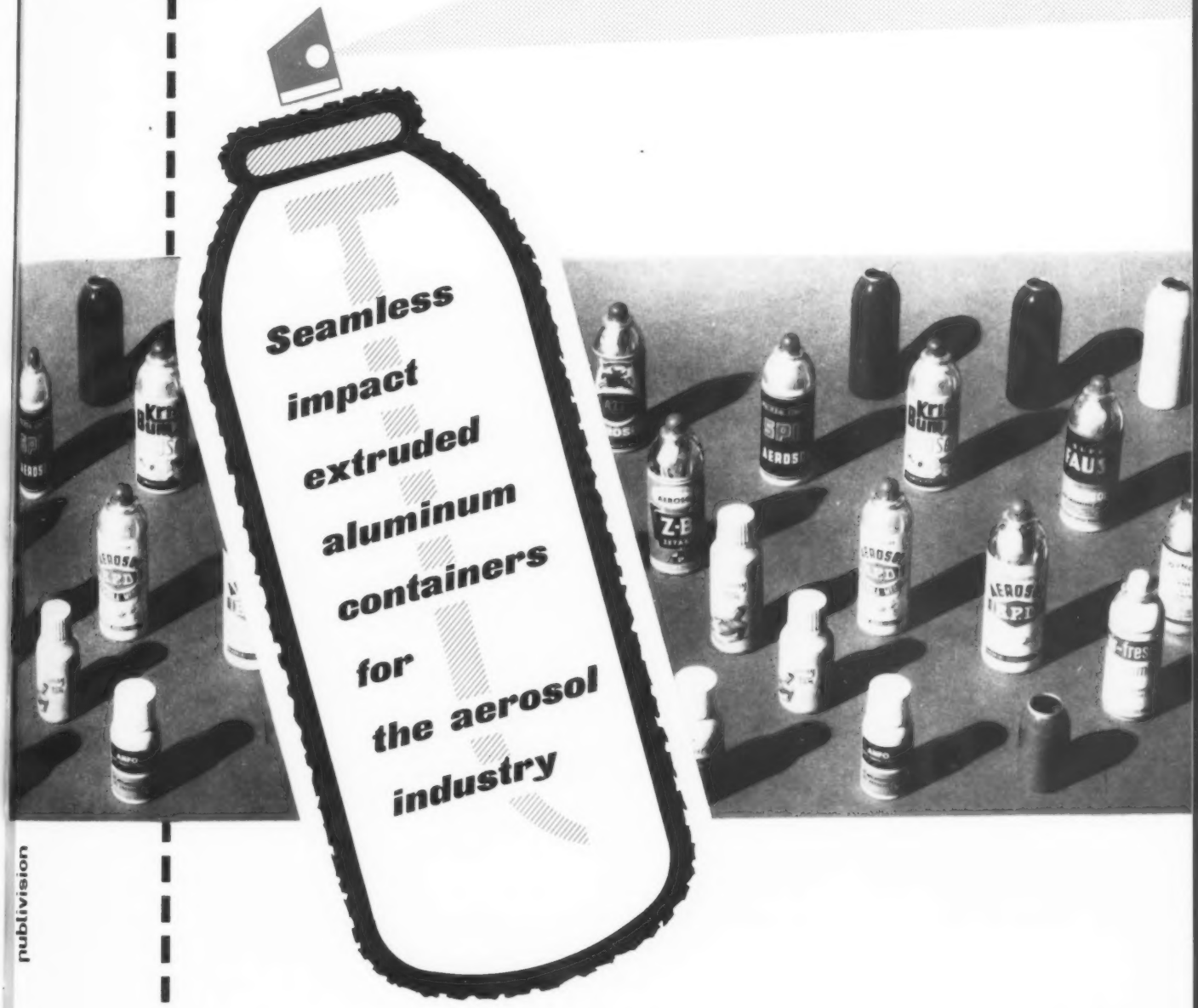
New nitrogen pressure filler for handling pharmaceuticals, food products and related specialties, recently developed by Mojonnier Associates, Inc., 9151 Fullerton Ave., Franklin Park, Ill., is capable of filling up to 60 aerosol containers per minute. It is designed to work with other Mojonnier "Add-A-Unit" filling line components.



B.P.D.

BOMBRINI PARODI-DELFINO

MECHANICAL PRODUCTS DEPARTMENT



nublivision

No crimps, no solderings, no seams, no cements, NO LEAKERS!

Maximum resistance to pressure: distortion of the container's bottom occurs at over 250 p.s.i.

Minimum weight: a 12 oz can weighs 1.41 ozs, a 6 oz can weighs .89 ozs.

Full range of sizes to meet any requirement of the aerosol industry: wide choice of diameters, lengths and shapes.

Standard 1" opening to fit any normal cup-type aerosol valve.

Perfect decoration of the cans; base-lacquering in any color plus lithographic printing in up to four colors.

All containers may be internally coated with special lacquers if they are to be filled with corrosive products.

BOMBRINI PARODI-DELFINO - 267, VIA DEL CORSO - ROME, ITALY

Rx for increased pharmaceutical sales...

Aerosol packaging with

ISOTRON®

Aerosol packaging creates new popularity . . . and new sales . . . for pharmaceutical products. Spray-on bandages, pressurized ointments, aerosol antiseptics, bronchial and nasal sprays are typical of the pharmaceuticals that have taken advantage of this modern packaging technique through ISOTRON propellents.

High-quality ISOTRON propellents meet exacting requirements for pressure, stability, solubility and particle size. ISOTRONS are nontoxic, nonflammable, noncorrosive. They're backed by over 40 years of *specialized* Pennsalt research in fluorine, the chemical that gives propellents their stability.

Call or write Pennsalt today for technical consultation on your formula. We can help you avoid many problems, improve consumer acceptance and produce economically. And for expert, experienced production, contact one of these leading contract loaders.

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Aerosol Techniques, Inc.
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Neodesha, Kansas
Allied Professional Associates Ltd.
Buffalo, N.Y.
Armstrong Laboratories
Boston, Mass.
Associated Brands Inc.
Brooklyn, N.Y.
G. Barr and Co.
Chicago, N.Y., Los Angeles
Capitol Packaging Co.
Forest Park, Ill.
Connecticut Chemical Research Corp.
Bridgeport, Conn.
Continental Filling Corp.
Danville, Ill.
Eveready Pressurized Products
Cleveland, Ohio
Fluid Chemical Company, Inc.
Newark, N.J.
Fuld Brothers Inc.
Baltimore, Md.
La Maur, Inc.
Minneapolis, Minn.
Larsons Laboratories
Erie, Pa.
National Spray Can Filling Corp.
Brooklyn, N.Y.
Old Empire, Inc.
Newark, N.J.
Peterson Filling and Packaging Co.
Danville, Ill.
Powr-Pak Inc.
Bridgeport, Conn.
Puritan Distributors Co.
Boston, Mass.
Regal Chemical Corp.
Brooklyn, N.Y.
Eugene Rose Company
Chicago, Illinois
John C. Stalfort and Sons
Baltimore, Md.
Sun-Lac Inc.
Newark, N.J.
Texas Aerosols, Inc.
Houston, Texas
Thomasson of Pa., Inc.
Norristown, Pa.
Western Filling Corp.
Los Angeles, Cal.

ISOTRON—The Key to Modern Living

by the meeting called by the editor of *Parfuemerie und Kosmetik* in Frankfurt Germany, reported in the pressure packaging section of *Soap and Chemical Specialties*, January 1958.

Replies so far received by our French contemporary indicate that its readers are in favor of an aerosol trade group and that industry expects technical and commercial benefits from its formation.

—★—

More Aerosol Toothpaste

Aerosol containers will capture 10 per cent of the toothpaste market this year and should account for nearly one-quarter of all toothpaste packages sold in 1959, it was predicted earlier this month by Kenneth M. Leghorn, president of Sun Tube Corp., Hillside, N. J., a subsidiary of American Can Co., New York. Sun manufactures aerosol valves and is also a leading supplier of collapsible metal tubes.

Three brands of toothpaste are now being marketed on a limited basis, Mr. Leghorn said, and another three or four are expected to be introduced before the year's end. Because the aerosol can is more expensive than the conventional metal tube, dentifrice manufacturers may be expected to offer aerosol toothpaste in the large or "economy" sizes where the price differential is smaller, he added.

"While aerosols will get a progressively larger share of the dentifrice container market, we expect no change in the demand for metal tubes. This was our experience with shaving cream after the introduction and wide consumer acceptance of aerosol shaving preparations," Mr. Leghorn concluded.

—★—

Borax Earnings Statement

U. S. Borax & Chemical Corp., New York, recently reported net sales of $11,736,353 in the final quarter of 1957. The company suffered a net loss of $141,940 in that period. No comparable figures for the last three months of 1956 were available.

Package Machinery Show

(*From Page* 147)

gram is a panel discussion featuring the theme, "The New Machine from Manufacturer's Floor to Your Final Acceptance and Satisfaction." It will include talks on "Your Machine Properly Tested in Our Plant — Properly Installed in Yours," by Charles Barr, president, F. B. Redington Co., Bellwood, Ill.; "Instruction of Your Personnel; Obtaining Satisfactory Performance and Final Acceptance," by Edward White, Warner Lambert Pharmaceutical Co., Morris Plains, N. J.; "What Service We Users Need," by Edward W. Love, director, machinery research and development, Bristol-Myers, Hillside, N. J.; and "What Service We Machinery Suppliers Can Provide," by Ira Gottscho, president Adolph Gottscho, Inc., Hillside, N. J.

The trade show, which begins on Mar. 25, will be open during the following hours: Mar. 25, 12:00 noon to 5:30 p.m.; Mar. 26, 9:00 a.m. to 5:30 p.m.; Mar. 27, 9:00 a.m. to 5:30 p.m.; and Mar. 28, 9:00 a.m. to 1:00 p.m. The majority of the exhibits will be manned by technicians who will be able to answer customers' questions about new equipment, new materials and new packaging concepts.

Included among the exhibitors are:

Armour and Co., Chicago; Bell Pak Division, Bell Machine Co., Oshkosh, Wis.; Better Packages, Inc., Shelton, Conn.; Chisholm-Ryder Co. of Pennsylvania, Hanover, Pa.; Continental Can Co., New York; Exact Weight Scale Co., Columbus, O.; Hope Machine Co., Philadelphia; Horix Manufacturing Co., Pittsburgh; Hudson-Sharp Machine Co., division of Food Machinery and Chemical Corp., Green Bay, Wis.; Karl Kiefer Machine Co., Cincinnati; MRM Co., Brooklyn, N. Y.; Olin Film Division, Olin Mathieson Chemical Corp., Baltimore; Reynolds Metals Co., Louisville, Ky.; Scandia Manufacturing Co., North Arlington, N. J.; Stokes & Smith Co., division of Food Machinery and Chemical Corp., Philadelphia; Shellmar-Betner, division of Continental Can Co., Mount Vernon, O.; and U.S. Bottlers Machinery Co., Chicago.

Highest Quality
POLYETHYLENE TUBING for AEROSOLS

. . . Now available in neatly traversed spools . . . no kinks no snarls!

Available on spools in lengths up to 3000 feet. Prevent costly delays—save time and money.

HYDRALENE NO. 35 polyethylene tubing will not split or crack even with tight friction fits.

Features:

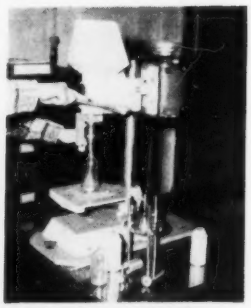
- Only finest quality virgin material.
- Close tolerances.
- Withstands severest tests for non-splitting or cracking.
- Also available in coils or cut pieces.

This tubing is the result of years of careful development work in the aerosol field.

Write today for free samples and Prices.

Hydrawlik
131 East First Ave.
Roselle, New Jersey
Phone CHestnut 5-0368

New combination capper for aerosols

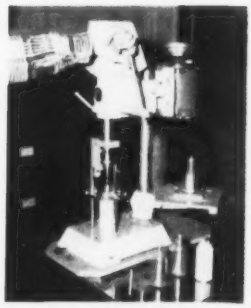


Capping Bottles

Specifications for drill press capper:

12" x 24" x 30"

¼-HP, 110-V, AC Motor



Capping Cans

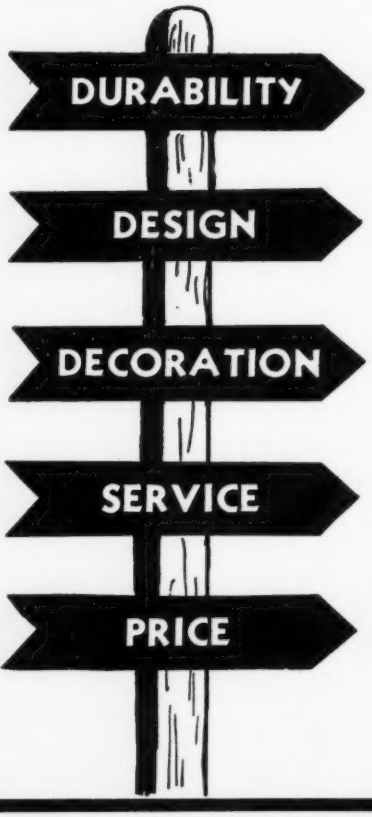
New combination drill press capper for capping either aerosol bottles or cans. Compact unit ideally suited for small run and laboratory use. Bottle capping unit crimps valve edge down over outside of bottle. Can capping device creates ridge inside the cap larger than can opening to prevent valve from blowing off under pressure. Both units can be purchased separately or as a unit. Drill press may be used as such when units are not attached.

For further details, write or call

BUILDERS SHEET METAL WORKS, INC.

108 Wooster Street **New York 12, N. Y.**

Call: William Scheck — CAnal 6-5390



Eastern's superior workmanship guarantees strong, durable containers that will take your product safely to market.

Eastern's experts can be of major assistance in designing packages that win sales success.

Eastern is noted for top-quality lithography on every shipment.

No costly interruptions with Eastern's service — shipments arrive when and where you specify.

Eastern's advantages available at competitive prices because of our modern plant and long experience.

All Signs Point to EASTERN *for Distinctive* PACKAGING

Start on the road to a distinctive package for your waxes, cleaners, polishes and other specialties by calling in Eastern. Plain or lithographed — a package by Eastern guarantees satisfaction for both you and the consumer.

Further details available without obligation

W N S

EASTERN CAN CO., INC.

31 Keap St., Brooklyn 11, N. Y.

ULster 5-0100

Production...

EQUIPMENT · MATERIALS · PROCESSING

Book Reviews

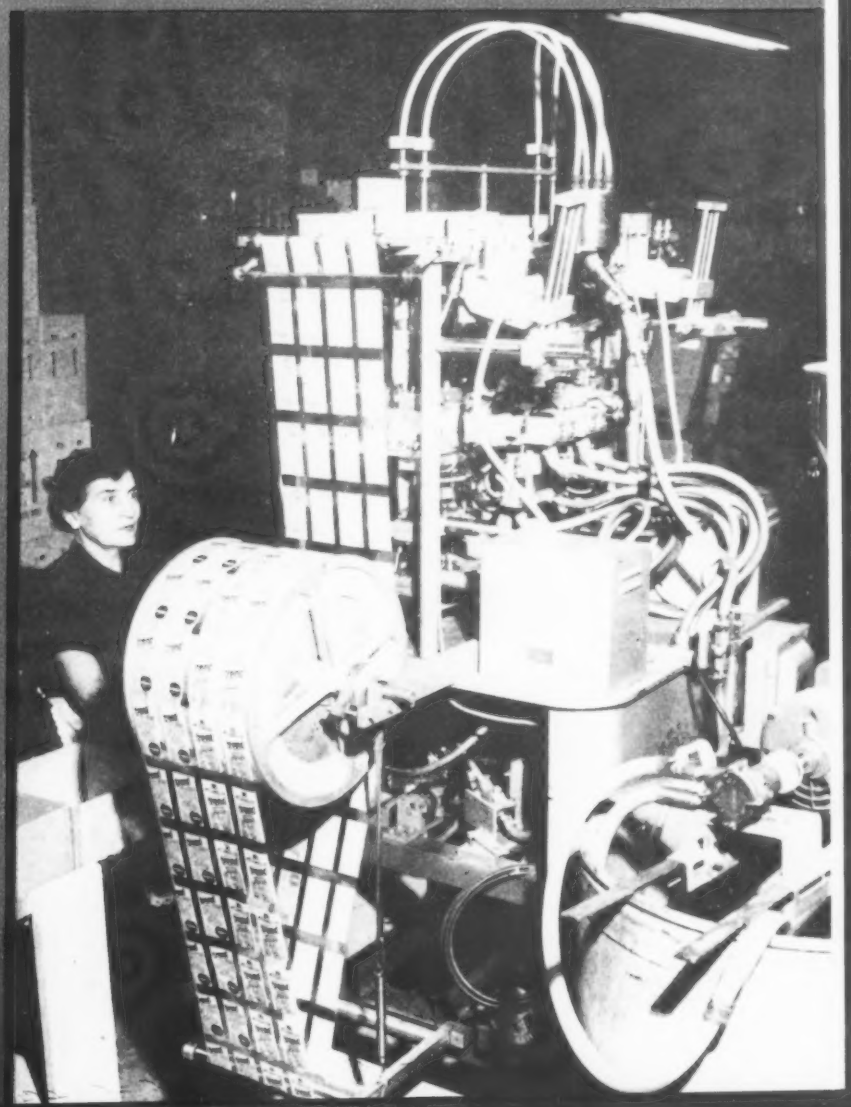
Production Clinic

Soap Plant Observer

Products and Processes

New Patents

Bulletins and Equipment



The problem of packaging Purex Corp.'s "Trend" liquid detergent in half-ounce plastic packets to be distributed free as part of a washing machine promotion was overcome by using "Skotchpak" film of Minnesota Mining & Manufacturing Co. Here, the detergent, fed from large drum at right, is metered in pre-set amounts to four packets at a time. Brown filling machine forms, fills and seals packets which are formed from rolls of film. Story on page 167.

Improved

HOUCHIN MACHINES

make GOOD soap

Better!

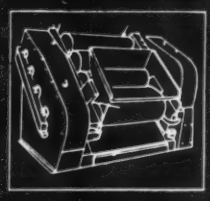
Houchin Machinery Company has had more than 117 years' experience in the making of fine soap machinery.

It has constantly kept abreast of the needs of the industry—and, frequently, has anticipated those needs before they were actually formulated.

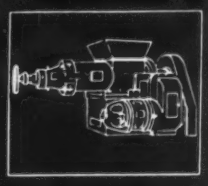
In the future, as in the past, you will find that improved Houchin machines will help you make good soap, better.

We'll be glad to give you facts and figures.

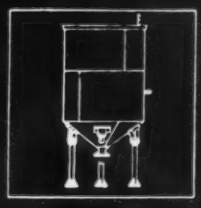
Why not write us about it today?



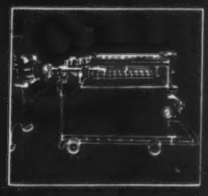
MILLS



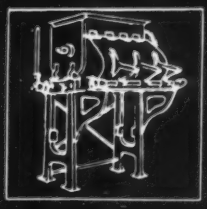
PLODDERS



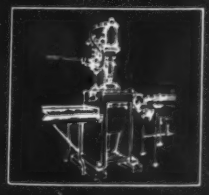
KETTLES



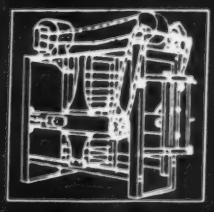
TOILET SOAP CUTTERS



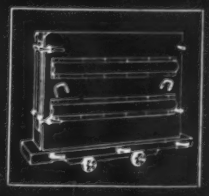
AMALGAMATORS



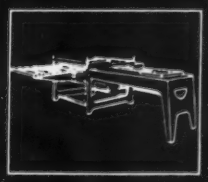
PRESSES



SLABBERS



SOAP FRAMES



LAUNDRY SOAP CUTTERS

VARIABLE SPEED CRUTCHERS

HOUCHIN MACHINERY CO., INC.

HAWTHORNE, NEW JERSEY, U. S. A.

Manufacturers of Soap Making Machinery for over a Century

Liquid Detergent in Pouches

PACKAGING liquid detergent in flexible plastic film pouches was thought to be virtually impossible until Purex Corp., South Gate, Calif., discovered a heat sealable polyester film.

The firm is now in the middle of a tie-in promotion on its "Trend" detergent with Dishmaster Corp., Pontiac, Mich., makers of a line of automatic dishwashers. Purex is furnishing half-ounce samples of its detergent—enough to do one "Dishmaster" load – with each machine the Michigan firm turns out.

When the decision was made to participate in the promotion, the first questions that had to be answered were how to contain the sample, and what material to use.

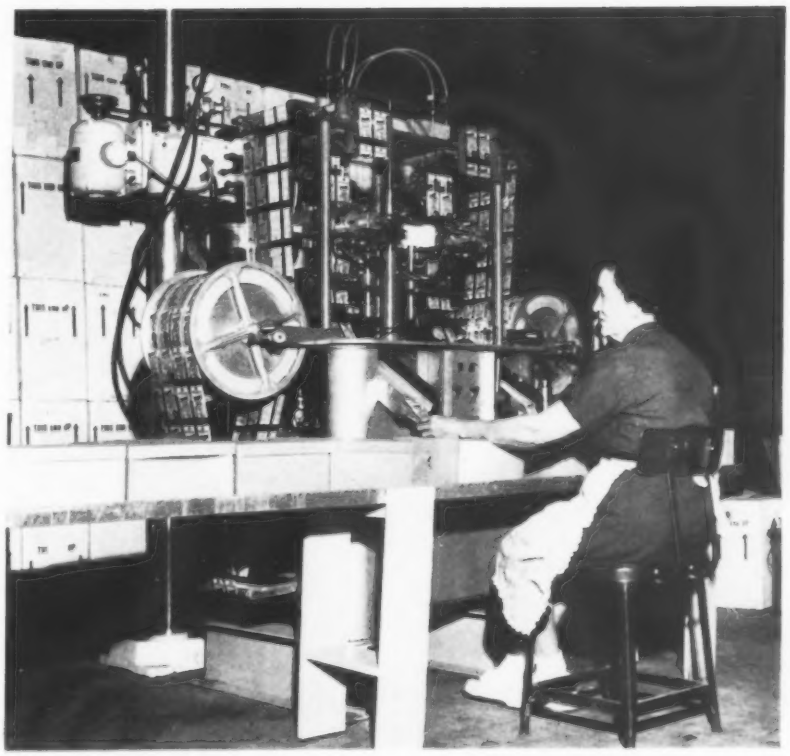
Since a half-ounce is fairly small in volume, it was thought a pouch or tube made from a flexible plastic would be best from both a cost standpoint and for ease of handling and production.

The plastic film would have to meet fairly stringent requirements. Selection would be made on the basis of low transmission rates of water, alcohol and perfume – or essential oils. In addition, the wetting action and low surface tension of a detergent in aqueous solution puts an additional burden on the film.

If the heat seal seam is weak or poorly made, a detergent will quickly find its way through an area with an inadequate seal, just as it will quickly pass through an area of high porosity.

Another factor Purex had to weigh was the effect of a liquid in

Front and rear panels, respectively, of "Scotchpak" polyester pouches for "Trend" liquid detergent promotion of Purex Corp. Packets carry reproduction of regular can and label.



Machine operator, right, acts as inspector to check each packet, insuring it has been formed, filled and sealed correctly. Double slide arrangement fills two cartons simultaneously.

MECCANICHE MODERNE

CORSO SEMPIONE, 51 — BUSTO ARSIZIO (ITALY)

"SABIZ" SPRAY DRYING PLANT

"BALLESTRA" Patent

Manufacturing Characteristics

Atomization spray nozzles.
Adaptable to three modes of operation: parallel flow, countercurrent and mixed flow.
Product discharged at room temperatures; eliminates agglomeration.
Free discharge of product without use of auxiliary equipment.
Direct or indirect utilization of gases obtained by the complete combustion of fuel oil or natural gas.
One main panel for control and operation.
Automatic continuous perfuming possible.
Can spray dry heat sensitive products.

Standard Outputs

From 250 Kgs. per hour up to 3000 Kgs. per hour and more, if required.
Efficient operation of the plant results in substantial savings.

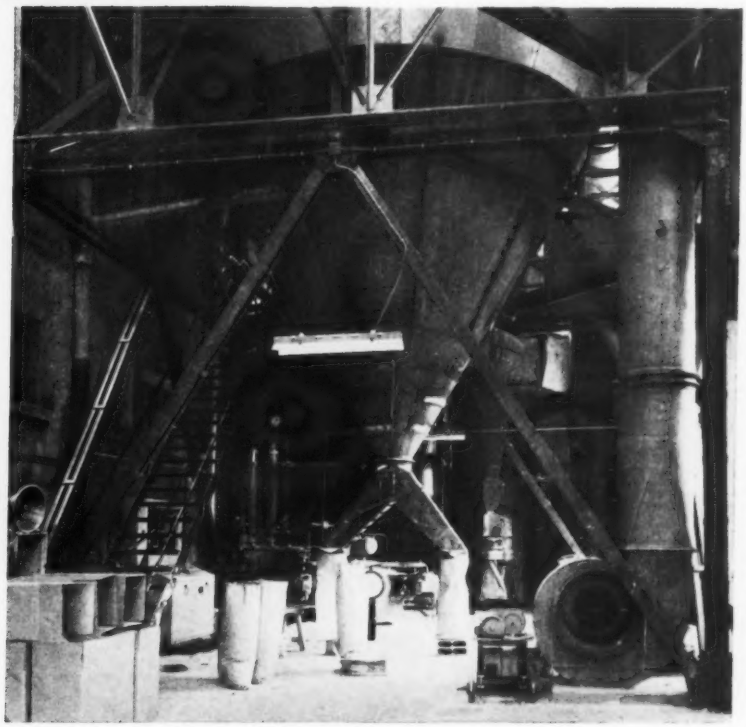
Physical Characteristics of the Dried Products

From the same slurry, merely by adjusting some valves, it is possible to get:
Dried products such as hollow beads or fine powder.
Crystallized products such as beads or granules.

Adjustable to a wide range of specific gravities

from the same slurry. If used for synthetic detergents, this plant can be operated automatically in connection with our continuous sulfonation plant "SOLFON."
Without any obligation to you, our technical staff, research laboratory and experience are at your disposal: let us solve your production problems.
Please don't hesitate to ask for references, analyses, offers, samples, visits to factories equipped with our plants, etc.

500 Kgs. per hour "SABIZ" Spray Drier in operation at **HUILERIES ANTONIN ROUX & SAVONNERIES J. B. PAUL — MARSIGLIA (FRANCE).**



U. S. Sales Representatives:
AMERICAN ASSOCIATES
520 Fifth Ave., New York 36, N. Y.

Filled detergent packets have excellent seam strength, almost as strong as the film itself. Here a packet is subscribed to bursting pressure while in a vacuum chamber.

a film pouch. Because the pouch would receive some abuse in shipping and handling, the film would have to be of high mechanical strength. In some cases in which liquids are packaged in film it has been found that a "hydraulic action" – or the force of the liquid continuously washing from side to side – can eventually break open a package.

In order to choose the best film for the job, a test program was set up in which film pouches were to be exposed for 60 days to the following conditions: 90°F. at a relative humidity of 90 per cent, 45°C. at zero relative humidity.

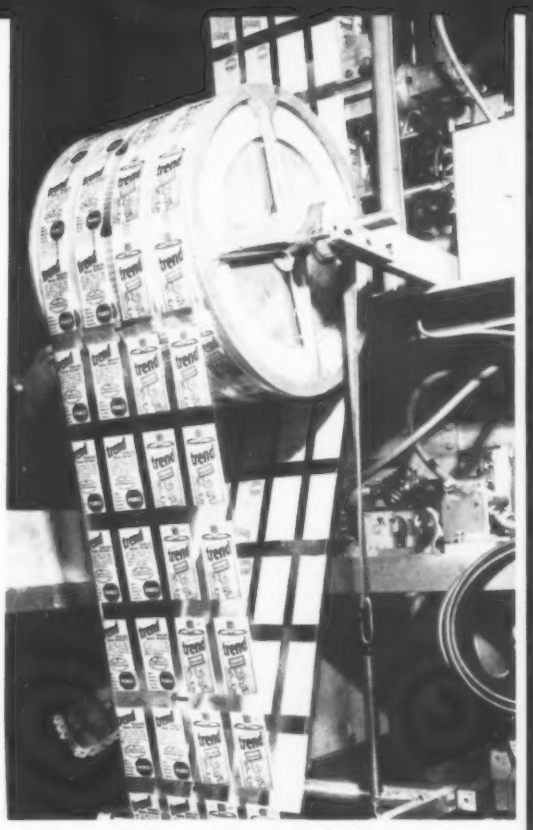
At the end of the testing period, the pouches filled with detergent would be weighed for loss or gain in weight.

Purex, after consulting with various manufacturers, selected seven films which, judging from stated performance characteristics, were thought would satisfy its requirements.

The films were polyethylene, plasticized and stabilized rubber hydrochloride, heat-sealable polyester, and laminates of polyethylene, aluminum foil and acetate; rubber hydrochloride and foil; and, rubber hydrochloride and cellophane.

Polyethylene was also given some consideration in the form of a molded tube, but the higher cost of the tube and the advantages of a larger display area on a film pouch led the firm to rule out this type of packaging.

After the tests were completed, it was found that the heat-sealable polyester film, made by



Rolls of printed "Scotchpak" polyester film are fed into both sides of the Brown bag filling machine. The film printed to resemble miniature cans of "Trend" detergent, is sealable on the unprinted side.

Minnesota Mining and Manufacturing Co. under the tradename "Scotchpak," gave the most satisfactory performance.

Purex then contracted with Western Package Products Co., Pasadena, to print "Scotchpak" film with a six-color flexographic reproduction of the actual "Trend" can. It was this firm, through its executive vice-president T. T. Bruffy, that was instrumental in Purex's discovery of the film.

Mr. Bruffy, also vice-president of the western division of the Flexible Packaging Association, learned of the film soon after its announcement and had become

An assistant packs filled cartons of polyester film packets of "Trend" detergent into shipping boxes and keeps a steady supply of empty cartons ready to be filled.

Liquid detergent packets can take the shock force delivered by the blow of a hammer as shown below.

LOOK TO U.S. *for Every* LIQUID FILLING NEED!

YOU CAN SPARK your entire packaging operation *with the right filler!* Anything short of that can snarl your packaging pace.

With decades of liquid filling know-how, U.S. can custom-engineer your filler to fit your operation *precisely.*

FOR RECOMMENDATIONS, please specify: *Your product, size and type container and desired filling rate per minute, hour or day.* No obligation will be implied. Address the home office.

MOST AUTOMATIC ONE-OPERATOR MULTIPLE FILLER

MODEL B-49 STRAIGHTLINE VACUUM FILLER for all liquids. Available with or without discharge conveyor. Contact parts of stainless steel, or in plastics on order. Fills automatically while empties are loaded. Easy operating lever activates container feed; otherwise operation is completely automatic. Adjustable for AGST to gallon size finishes. A dependable machine where filling cost is a factor. Efficient. Send for the Model No. B-49 Bulletin.

CONTINUOUS FILLING

MODEL B-2 VACUUM FILLER provides efficient continuous production, filling two containers at a time. Handles a wide variety of liquids and semi-liquids. Has automatic product supply; vacuum is adjustable and flow-regulated for accurate, clean filling. For containers up to 4⅛" dia. round or rectangular. Efficient. Send for Bulletin B-2.

ALL LIQUIDS, ALL CONTAINERS

THE U.S. SIPHON FILLER is adjustable for all types of containers. Stainless steel filling tubes and acid-resistant glass lined tank. Handles all types liquids, including foamy products that do not permit agitation. Fills without overflow or spillage. Send for the Siphon Bulletin.

U. S. HAND FILLERS are designed for easy, quick filling operation. Send for "Hand Filler Bulletin."

E-Z Two-Tube Air Cleaner

Popular companion to semi-automatic fillers for products that require a clean, dry container. Blows carton lint and dust out of new containers. Handles any size containers. Up to 40 p.m. Send for E-Z Bulletin.

U. S. BOTTLERS MACHINERY CO.

4019 N. ROCKWELL STREET — CHICAGO 18, ILLINOIS

BOSTON • NEW YORK • PHILADELPHIA
DENVER • PORTLAND, ORE. • OGDEN • JACKSON, MISS.
SANTIAGO • SAO PAULO • MONTREAL • TORONTO

SAN FRANCISCO • LOS ANGELES • SEATTLE
KANSAS CITY • TUCSON • ATLANTA • HONOLULU
VANCOUVER • WINNIPEG • TOLEDO (EXPORT)

SPECIALISTS IN LIQUID FILLING AND CONTAINER CLEANING EQUIPMENT

Table of Test Results

Film	Results	
	90°F. at 90% Relative Humidity	45°C. at 0% Relative Humidity
Polyethylene	satisfactory	seam leakage
Polyester	satisfactory	satisfactory
*R-HCl, foil, acetate	satisfactory	seam leakage
R-HCl, foil, cellophane	seam leakage	seam leakage
R-HCl, foil	seam leakage	seam leakage
R-HCl, cellophane	excessive weight loss	excessive weight loss
Polyethylene, foil, cellophane	seam leakage	seam leakage

*R-HCl — rubber hydrochloride

impressed with its potential as a packaging medium.

"This film, the first heat-sealable polyester, with its strength and all around physical properties, gives packagers and converters a wider potential of products which can be contained in flexible pouches. It has excellent resistance to most solvents, acids and bases, oils will not penetrate it and it has very good moisture vapor and gas resistance. Best of all, it can be used in standard machinery with only minor adjustments," Mr. Bruffy said.

The film, which has the exceptional mechanical strength of polyesters, combines this property with a heat seal almost as strong as the film itself. In 2.5 mil thickness, the caliper used by Purex, it has an extremely low water and vapor transmission rate, plus a low odor transmission rate.

The entire packaging operation is done by the William Bishop Co., Burbank, a custom packager. Printed rolls of the film are fed into a standard Brown filling machine which forms and fills two of the single-use packets at a time. The Bishop firm has made a few minor modifications on the Brown machine to accommodate more easily the "Scotchpak" polyester film.

The filled packets, printed to resemble a miniature container of the household detergent, are packaged and shipped to the Pontiac plant of the Dishmaster company where they are attached to each automatic dishwasher as it is crated.

Thus the packets of detergent actually receive more than normal handling as they are packed and shipped twice.

—★—

New du Pont Bleach

A new odorless household bleach for use in packaged dry bleaching preparations and cleansers was introduced recently by the electro-chemicals department of E. I. du Pont de Nemours & Co., Wilmington, Del. Called "Oxone," the product will be manufactured at a new plant, which will be constructed at du Pont's Memphis, Tenn., unit. The new plant is expected to be completed in 1959. Meanwhile, limited amounts of "Oxone" will be available for commercial development from a pilot plant at Niagara Falls, N. Y.

The product is said to be especially suited for use on cotton fabrics and blends of cotton and man-made fibers, as well as silks and woolens. Du Pont will manufacture the new bleaching agent, but will not formulate or package dry bleach compounds.

—★—

New Equipment Concern

Formation of Wm. T. Hand Equipment Co., Manhasset, N. Y., was announced recently by William T. Hand, president. Mr. Hand formerly was associated with Consolidated Products Co., Hoboken, N. J., used machinery dealers. The company will handle new and used machinery for the chemical processing and related industries. As dealers in used equipment, the firm will purchase either complete plants or single items of equipment. A new bulletin describing the company's present line of used equipment is available on request, according to Mr. Hand.

Polyethylene Tank Data

A new catalog sheet, illustrating and describing its recently expanded line of polyethylene tanks, was issued last month by American Agile Corp., Maple Heights, O. The sheet provides information on the firm's cylindrical, self-supporting tanks of 55-gallon capacity; self-supporting tanks of 25-gallon capacity; and 20″ x 12″ x 20″ rectangular, self supporting tanks. In addition there are six illustrations of custom engineered polyethylene tanks and liners augmented with descriptive copy. The data sheet may be obtained from American Agile Corp., P. O. Box 168, Bedford, O.

—★—

New Calgon Bulletin

A new two-color bulletin describing its "Calgon 15-J," a controlled solubility phosphate used in the downhole treatment of oil wells, was issued recently by Calgon Co., Division of Hagan Chemicals & Controls, Inc., Pittsburgh. Complete solubility data and recommended dosages are also provided. In addition the sheet lists schematic drawings illustrating various methods of application. Copies of the bulletin may be obtained from Calgon Co., Dept. 211, Hagan Building, Pittsburgh 30.

—★—

Polymer Deposition Process

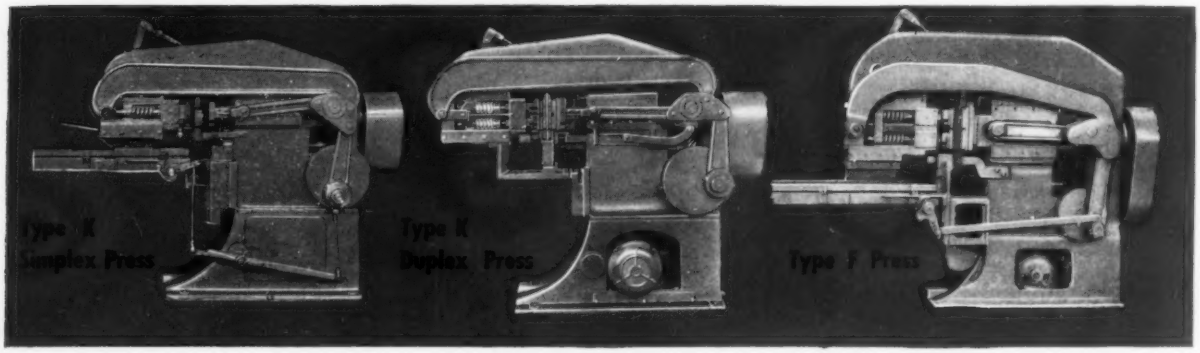
Mildew-proofing of cotton fabrics, wood and other fibers, both natural and synthetic may be facilitated by a new process which has been licensed recently to Marathon Division of American Can Co. Tee-Pak, Inc., Chicago, manufacturers of cellulose casing and plastic packaging material, licensors, have developed the process which consists of the deposition of a polymeric material within wood fiber, thus modifying the fiber's properties. The treatment, said to be economical, has been found applicable to a number of other materials.

Marathon holds an option, which may be exercised later this year, to make the license exclusive in its field except for any other licenses outstanding at the time.

JONES

Automatic Soap Presses

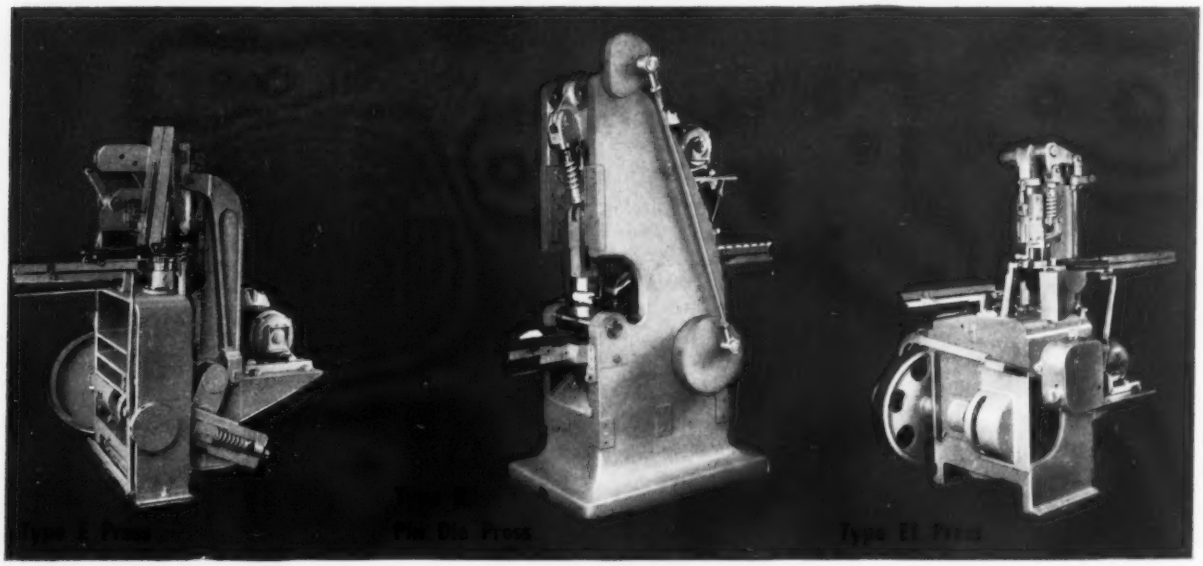
JONES PRESSES, with their exclusive, patented *toggle motion,* have become the standard throughout the world wherever high production, high quality, and perfection of finish are paramount considerations. Standard Jones Presses illustrated here meet all soap pressing requirements. A Jones Toggle Operated Soap Press will improve the appearance of your product, increase your production, reduce your costs. Write today for complete information.



For toilet or laundry soap cakes of any shape (except highly convex cakes) with side band. Speeds of 120-140 cakes per minute.

Applications same as Type K Simplex. Presses two cakes simultaneously. Speeds up to 250 cakes per minute.

For large toilet or laundry soap cakes. Available in Simplex or Duplex Models, pressing one or two cakes per stroke.



For small toilet soap cakes (1½ oz. or less). Speeds up to 200 cakes per minute.

For toilet soap cakes of unusual shape, oval cakes, or cakes having highly convex faces, with or without side band. Speeds up to 100 cakes per minute.

For small toilet soap cakes with side band. Speeds up to 120 cakes per minute.

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Cartoners — Case Packers — Soap Presses

Book Reviews

New Schwartz, Perry Volume on Detergents

Surface Active Agents and Detergents, Vol. II, by Anthony M. Schwartz, Harris Research Laboratories, Washington, D. C.; James W. Perry, Western Reserve University, Cleveland; and Julian Berch, Harris Research Laboratories. Published by Interscience Publishers, Inc., New York, nine and one quarter by six and one quarter inches, cloth covered, 839 pages, price $17.50.

The present volume supplements and extends the previous book by Schwartz and Perry, entitled *Surface Active Agents: Their Chemistry and Technology* (1949). The earlier text covers the field up to the beginning of 1947, while volume II is devoted to developments during the period 1947-56. Originally the authors intended to revise the first book so that a single volume might cover modern surfactants and synthetic detergents. The phenomenal advances in surfactant and detergent chemistry and technology made such an arrangement impractical. A summary presentation of many of the scientific fundamentals and earlier technical achievements was therefore decided upon in favor of more recent developments in product formulation, new basic knowledge about the mechanisms of surface activity and detergency, and the emergence of entirely new types of surface active agents, such as the synthetic polymers.

The book consists of an introduction and four main parts. Among other subjects the introduction deals with the economics of the detergent industry and with its technical pattern, which has lately tended to be more dynamic in the processing than in the synthesizing of surface active materials.

Part I, devoted to processes for synthesizing and manufacturing surface active agents, is subdivided into a section of surfactants of previously recognized classes and one on new surfactant types. Information on established products includes very recent developments pertaining to the individual classes. New types discussed are: organosilicons, phosphorus compounds, highly fluorinated products, sulfoxides, and polymeric surfactants.

In part II the authors cover special function surfactants and compositions. Topics include surfactants for non-aqueous systems, and for germicidal and fungicidal applications; anticorrosive compositions; surfactants for special textile processing; special physical forms; inorganic builders and additives; organic builders and additives; mixtures of surfactants; analysis and analytical behavior; biological effects and toxicity. The section covering special physical forms treats bar form detergents, aerosols, briquettes, and jellies, in addition to the more conventional types.

Part III deals with physical and colloidal chemistry of surfactants in theory and practice. Its five sections include recent knowledge on the phenomena of surface activity and on detergency.

The fourth and final part is devoted to practical applications of surfactants. Detersive uses include the washing of fabrics and textile materials and the cleaning of hard surface and other nonfibrous materials. The authors also deal with uses in the textile and drycleaning field, in medical and cosmetic preparations, and in a vast variety of other industries as well as in agriculture.

An author index and very extensive and helpful subject index are appended. The book combines a scholarly approach with a wealth of thoroughly practical information on all phases pertaining to the production and application of surface active agents and detergents. The large and heterogeneous mass of material is well organized and lucidly presented.

—★—

Insect Contamination

Insect fragments and their interpretation as food and drug contaminants are the subject of a volume currently being prepared and assembled by scientists of the Bureau of Biological and Physical Sciences of the Food and Drug Administration. The book will include the following sections: a comprehensive survey of insects—field, plant and storage—which infest food products, with a discussion of routes of adulteration and the significance of various contaminants; life cycles and habits, morphology of the whole insects and patterns of fragmentation; descriptions and illustrations in micromorphological detail of fragments encountered in adulterated foods and drugs; differential characteristics, with photomicrographs and drawings for identification of insect contaminants by their fragments.

The book's title will be "Identification of Insect Contamination of Foods by the Micromorphology of Insect Fragments." Its contents should be of interest to the analyst in the laboratory; to plant sanitarians and control officials; to technical, legal and consumer consultants; and to others working in the field of food and drug contamination.

In order to establish the cost of such a volume the bureau is attempting to assess potential demand for it by requesting interested parties to let it know if they are interested in buying the book.

—★—

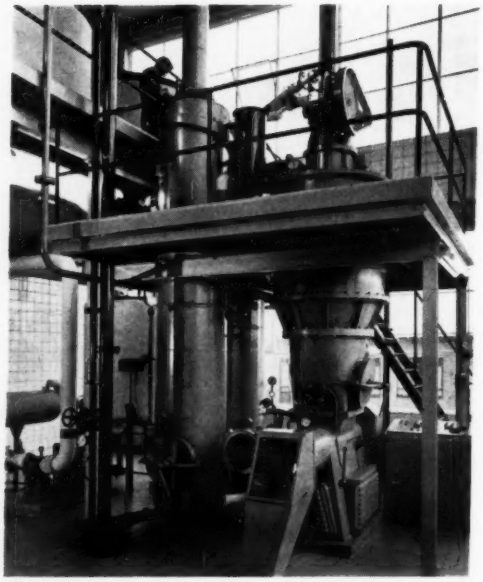
German Soap Year Book

Yearbook for the Production Man (Jahrbuch fuer den Praktiker) 1958, published by H. Ziolkowsky K.G., Augsburg, Germany, publishers of *Seifen-Oele-Fette-Wachse*. Flexible plastic cover, pp. 300, 4¼ inches by six inches, price DM. 8.40 plus postage.

This pocket sized yearbook

(*Turn to Page* 187)

Continuous Soap Plants



Photograph of a MAZZONI Vacuum Soap Dryer automatically producing toilet soap base for toilet soap manufacture.

• • •

★ The Vacuum Process, over all other old and new cooling methods, enables you to make use of the water at the temperature available at any factory as it is possible to cool the soap at such a temperature because of the vacuum and the peculiar devices provided—without resorting to expensive cooling equipment—so that its consistency is satisfactory no matter what the cooling water temperature is.

★ Our manufacturing range also includes: plants for continuously sulphonating and spray-drying synthetic detergents in the form of hollow beads—continuous fat splitting and fatty acid saponification plants — continuous glycerine recovery and refining plants.

Advantages of the MAZZONI Process:

★ Small plant space; only one operator needed.
★ Saves 70% in steam, 50% labor, 40% electric power.
★ Operates at low temperatures, avoiding deterioration of soap.
★ Vacuum process gives better toilet soaps. Deodorizing effect reduces perfume needs. Smoother, grit-free cakes which wash off evenly. Improved lathering.
★ Transparent toilet and laundry soaps without addition of glycerine, alcohol, sugar, and any other additives.
★ Complete installations (mixers, mills, plodders, cutters and stampers) for milled toilet soap and soap flakes.
★ Since 1945 more than 200 plants have been installed in different countries of the world.
★ Laundry soaps, pure from 62% fatty acids upwards or filled from 35 to 62% fatty acids, ready for pressing and immediate packing without slabbing, cutting, etc. Automatic perfuming device included.
★ Suitable for adaptation in any soap factory, —a compact, low-cost vacuum process, continuous from neat soap to pressing and wrapping.
★ Soaps showing a beta phase content from a minimum of 75 percent to a maximum of 100 percent. Analyzed in the laboratories of Procter & Gamble Company, Cincinnati. Analysis is given with their permission.
★ Plants for outputs of one-quarter-ton, half-ton, one ton, two tons, three tons or higher per hour.

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BHK/BO.

27th November, 1957.

Messrs. G. Mazzoni S.P.A.,
Casella Postale N.375,
Busto Arsizio,
VARESE, ITALY.

Dear Sirs,

Your Mr. Negri has now completed the work entailed in completing installation of our new machinery, and we take the opportunity of thanking you for making him available to us and for the excellent service which he has given.

During production tests he has been able to suggest various small modifications, which have resulted in improved performance and we are now well satisfied with the stable and high quality of production of all types of soaps through the machinery.

We have produced pure soaps, of T.F.A. ranging from 64% and 78% down to 65% and the production in each case has been very stable and of excellent quality. We have also produced 45% filled laundry soaps and again with most satisfactory results. All these have been produced with the sole use of the machinery supplied by you, and without using conventional milling etcetera.

Congratulations both on the versatility of your machinery and of your erector Mr. Negri, with whose help we have been able to bring the machinery into production very quickly.

Yours faithfully,
for FOMEX (PTY.) LIMITED.

BURNHAM KING.
MANAGING DIRECTOR.

For further detailed information, write to

G. MAZZONI, S. p. A.

Busto Arsizio, (Varese) Italy

Cable address: Cosmazzoni, Busto Arsizio

NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine. MacNair - Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be $1.00 per copy.

No. 2,819,198. Cold-Stable Pesticide Solutions, patented by Lyle D. Goodhue, Bartlesville, Okla., assignor to Phillips Petroleum Co., Bartlesville. The patent claims a normally liquid hydrocarbon solution containing therein dissolved a pesticide ingredient which upon cooling of said solution will become solid and separate from said solution comprising also dissolved therein a hydrocarbon soluble wax in a sufficient proportion that upon cooling of said solution it will form a gel-like structure before an appreciable quantity of said pesticide can separate from the solution, said hydrocarbon being a petroleum solvent having a flash point of at least about 175° F., containing 5–40 weight percent by way of the pesticide base on the entire weight of the solution, and also containing 0.1–6 weight percent of said hydrocarbon soluble wax, the weight of the wax being based upon the weight of the normally liquid hydrocarbon solvent.

No. 2,820,768. Soaps and Their Methods of Preparation, patented by Louis Edmond George Hubert Fromont, Molenbeek St. Jean, Belgium. This patent covers a transparent toilet soap composition in solid form, consisting essentially of (1) a transparent sodium soap prepared by saponification of a mixture of tallow, cocoanut oil and castor oil, (2) a triethanolammonium salt of stearic acid, and (3) a quantity of triethanolamine in excess over the theoretical and amounting to no less than one mol and no more than two mols per mol of soap-forming fatty acid, said transparent sodium soap (1) constituting about 35 to about 40% by weight of the composition and said triethanolammonium salt (2) constituting about 35 to about 40% by weight of the composition, said soap composition having a pH value of approximately 7.5 in 10% aqueous solution and having the ability to neutralize a substantial amount of an acid and of a base without its lathering potency and its pH being affected.

No. 2,819,980. Process of Producing a Cold Water Soluble Laundry Starch and the Product Thereof, patented by Frank P. McCombs, Bexley, and Roy G. Hyldon, Columbus, O., assignors to National Industrial Products Co., Ohio. The patent teaches a process of producing a cold water soluble laundry starch which consists of slurrying a starch, adding borax in an amount corresponding to from 7% to 15% of the starch by weight, adjusting the pH of the mixture to a pH in the range of 3.5 to 6.5 by the addition of an acid, rolling the dispersion dry and sifting.

No. 2,820,000. Dentifrice Comprising Diatomaceous Silica, patented by Alfred Menzies, Los Angeles. Covered is a dental cleansing composition, comprising a major portion of diatomaceous silica and a minor portion of a dry powdered soap, said silica being pure to the extent of containing in excess of 90% SiO_2, said silica having a particle size distribution such that the entire silica will pass a 300-mesh screen and not more than about 10% thereof has a particle size of under 2 microns, all the ingredients of said composition having a hardness value less than dental enamel.

No. 2,821,500. Coated, Dustless, Granular Insecticide for Flies, Their Larvae, and Other Insects, patented by Julian H. Jackson and Herman S. Mayeux, Jacksonville, and William J. Head, Lake Jem, Fla., assignors to Wilson & Toomer Fertilizer Co., Jacksonville, Fla. Described is an insecticidal composition in granular form, characterized by inorganic, non-porous, water-insoluble granules with particle size range from 3 to 100 screen mesh, inclusive, as a carrier coated with an oil solution of an organic toxicant for the insect, and an organic attractant for the insect, which inorganic granules constitute approximately the entire solid carrier in the granular insecticide, and which oil is substantially non-volatile at atmospheric temperatures and relatively non-drying, the said granular insecticide being relatively free of loose, unattached pulverulent particles, substantially free from clumping and readily pourable, and is relatively dustless upon being poured from a container and under normal conditions of hand distribution.

No. 2,821,435. Valve Aligning Means, patented by Charles B. Wenner, Darien, Conn., assignor to Airkem, Inc., New York. In a mechanically actuated aerosol dispenser having means for supporting an aerosol container equipped with a depressible valve and discharge nozzle, said dispenser including a vertically movable member for depressing said valve to discharge a spray through the nozzle thereof, the improvement is patented that comprises an aligning device secured to said vertically movable member and registering with said valve, said aligning device including means separably interfitting with said valve to prevent relative rotation between said valve and vertically movable member.

No. 2,819,116. Dispensing Cap for Aerosols, patented by Robert H. Abplanalp, Bronx, N. Y., assignor of one half to John J. Baessler, Bronxville, N. Y. Disclosed is a dispensing cap for aerosol containers having a tubular discharge valve stem comprising: an upstanding peripheral wall across the interior which extends a valve operating tab attached for a short distance at its periphery to said wall to form a hinge portion therewith and otherwise unattached to the peripheral wall but extending closely adjacent thereto, a hub projecting from the inner side of said tab and chambered to form a socket for the tubular valve stem of an associated container, a rib extending from said hub to the side wall at the hinge portion and having therein a passage leading through said side wall, whereby pressure on the exterior of the tab may be utilized to operate the valve stem and unseat the valve for the discharge of the contents of the container through said passage.

No. 2,819,996. Stabilized Pesticidal Emulsifier Composition, patented by Gerard C. Riley, Philadelphia, assignor to Rohm & Haas Co., Philadelphia. Revealed is an insecticidal composition comprising 10% to 90% by weight of an oil solvent essentially consisting of hydrocarbons boiling within the range of 176° to 760° F., 3% to 10% by weight of emulsifying material comprising at least one alkylene oxide condensate type of emulsifier containing at least one group selected from the group consisting of oxyethylene and oxypropylene groups, an unsaturated bicyclic terpene selected from the group consisting of α-pinene, β-pinene, α-thujene, and sabinene as a stabilizer in an amount of 10% to 50% by weight of the total alkylene oxide condensate component of the emulsifying material, and 4% to 60% by weight of a member of the group consisting of chlordane and chlorinated bicyclic terpenes as an active agent.

No. 2,820,767. Hypochlorite Bleaching Composition and Method of Making, patented by Homer L. Robson, Lewiston, N. Y., assignor to Olin Mathiesen Chemical Corp., Baltimore. The invention calls for a composition of matter suitable for use in laundering consisting essentially of from 10 to 25 percent by weight of a material selected from the group consisting of sodium carboxymethylcellulose and sodium carboxymethylhydroxyethyl cellulose and from 90 to 75 percent by weight of sodium sulfate, said composition having been prepared by spray drying an aqueous mixture of from 2 to 10 percent by weight of said material and from 3 to 9 parts by weight of sodium sulfate per part by weight of said material to provide a spray dried product containing from 0.5 to 4 percent by weight of water and vacuum drying the spray dried product at a temperature up to about 150° C. to provide a vacuum dried product containing from about 0.1 to 0.3 percent by weight of water.

No. 2,819,995. Insect Repellent Sticks, patented by Helen E. Wassell, Pittsburgh, Pa., assignor to Union Carbide Corp., N. Y. An insect repellent stick is described consisting essentially of from about 65 to 75 parts of an insect repellent, from about 18 to 23.4 parts of fatty acid, and from about 7

(*Turn to Page* 189)

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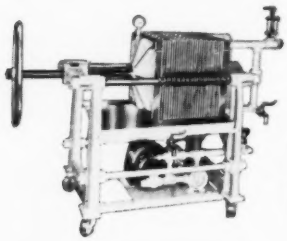

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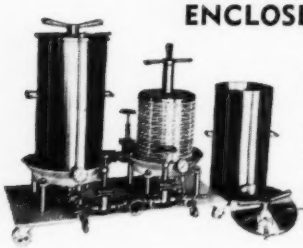

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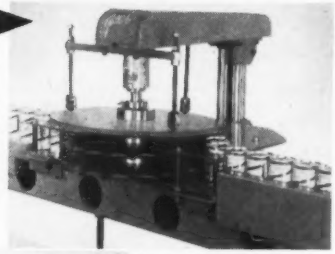

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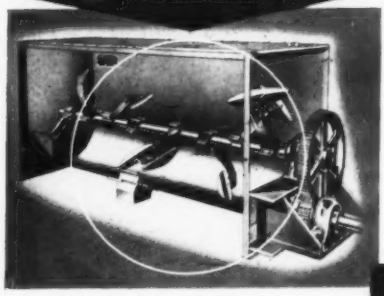

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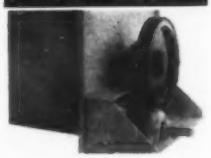

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Products and PROCESSES

Non-Caking Detergents

Anionic synthetic detergent powders made by spray-drying slurries containing trisodium pyrophosphate or sodium polymetaphosphate tend to agglomerate and cake in storage. It is claimed that this problem can be minimized or eliminated by using in the slurry a mixture of the two condensed phosphates in certain proportions. The optimum ratio of the weight of tetrasodium pyrophosphate to the weight of sodium polymetaphosphate ranges between 2.5/1 to 2/1. British patent 783,193 (1957) Unilever Ltd., Port Sunlight.

★

Dairy Detergent

Build up of milk stone in glass pipe lines in dairies can be minimized or prevented by the use of a non-sudsing cleaning composition containing the following ingredients:

	per cent
Caustic soda as a sanitizer	2
Tripolyphosphate	25-45
Trisodium phosphate as a water conditioner	3-8
Soda ash	6-9
Sodium metasilicate	45-55

Additional alkalinity is furnished by the presence of the soda ash. The silicate is said to provide good wetting and deflocculating characteristics, a large amount of active alkali for neutralizing acidic soil, and anti-corrosive properties. *Silicate P's & Q's*, Feb. 1958.

★

Moisture in Soap Bars

A study of the moisture level in all parts of a single soap or detergent bar indicates that an appreciable error may arise in sampling for moisture content, unless the whole bar or a symmetric portion such as a half or full quarter of the bar is taken for analysis. Experimental evidence shows that moisture content based on the whole bar may show 9.49 per cent whereas analysis of center slices may yield a value of 10.01 per cent.

Moisture sampling from 24 sites in a single bar of soap showed that results vary over a wider range than commonly suspected. Corners dehydrate much more rapidly than the center of the bar. Samples taken from the corners varied in moisture content from 8.88 to 9.12 per cent, whereas the center showed 10.97 per cent. Gildenberg and Blank, Colgate-Palmolive Co., in *J. of Am. Oil Chem. Soc.*, Feb. 1958, pp. 102-3.

★

Beer for Shampoos

A shampoo consisting of a mixture of beer and detergent is covered by a recent British patent. "Bitter" or "Bass" beers are preferred for the purpose. Improved lathering and cleansing properties and superior rinsability are claimed for a product containing 50 parts of lauryl sulfate and 50 parts of beer. Actually the beer content may vary from five to 75 per cent by weight. With such a preparation, the inventor claims, hair can be set in a fairly lasting manner without aid of setting or fixative lotions. British patent 782,081, Lincoln Hair Products, Ltd., London.

★

Aluminum Based Fungicides

Solutions of aluminum chloride and nitrate in combination with a surface active agent are claimed to exhibit a high degree of fungicidal activity. Such solutions can be applied by spraying. British patent 784,706, A. Mosca, Cuneo, Italy.

★

Ultrasonic Cleaning

A new line of ultrasonic cleaning equipment featuring a novel transducer element was introduced recently by General Ultrasonics Co., Hartford, Conn. The equipment is said to be suitable for production cleaning and degreasing of a variety of engine parts, optical goods, etc. and is claimed to remove speedily and economically radioactive contaminants, buffing compounds, oils, greases, waxes, paint films, inks, lint, and other contaminants.

According to the manufacturer the high efficiency of the transducer makes possible the production of high intensity energy at low initial cost and small operating expense. The transducers are built into "Sonitanks" ranging in size from six quarts to 50 gallons. For larger installations they are built into immersion "Sonicells".

★

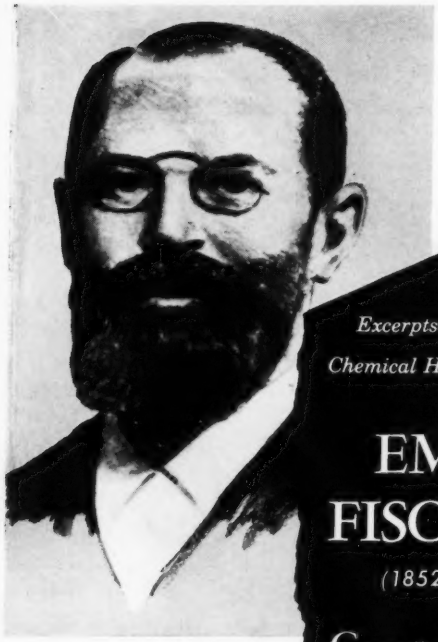
More on Syndets in Sewage

Difficulties arising in British sewage works, rivers and water supply caused by the use of synthetic detergents in households and industry are reviewed in the first progress report of the Standing Technical Committee on Synthetic Detergents. This group was set up in January 1957 to encourage and assist coordination of research by manufacturers and suitable public bodies to avoid or overcome these difficulties without undue burden on public funds.

The report deals with foam formation, which is still the most spectacular aspect of the problem. Possible effects of antifoaming agents (added at the sewage works) upon effluents and streams and also of additives incorporated in retail type detergents are under consideration by the committee. Experiments are in progress to evaluate the toxicity of detergents to aquatic life and to determine their effect on reaeration.

Since the initial rate of growth of detergent consumption has levelled off in the past three years the committee does not foresee any substantial change in the problem, unless formulations are essentially altered.

Present ways of dealing with foaming are palliatives rather than cures according to the report. The aim is to produce household detergents which can be readily eliminated during sewage treatment by present methods while being as acceptable to the housewife as current products and requiring no additional outlay for capital equipment and raw materials.



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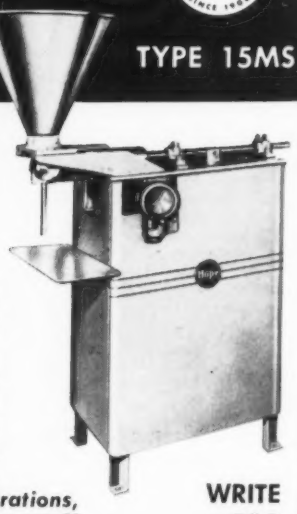

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PRODUCTION *Clinic*

Research on a Limited Budget

By Charles H. Kline*
Shulton, Inc.
Clifton, N. J.

NOW that Nikita Krushchev has emerged as the most successful research director of 1957 – at least in the outer space division – the problems of managing research on a middle-sized budget seem almost obsolete. Federal appropriations for research and development now run to some billions of dollars a year. Even in private industry there are now a good many large companies that spend tens of millions of dollars annually on research. But there are also a good many small or middle-sized companies with relatively limited funds that need successful research to survive and grow.

Before examining some of the special problems of managing research in these companies, let us agree on some definitions. Rather arbitrarily, let us define a middle-size company as one with sales of five to fifty million dollars a year. If we assume these companies spend one to three per cent of their annual sales income on research and development, we may then define a middle-sized research budget as one between $50,000 and $1,500,000 a year.

In terms of personnel, at the lower end of this range we are talking about a research group of perhaps three chemists or engineers, a technician, and a secretary. Generally speaking, this is just the minimum size for an effective research and development group. At the upper end of our budget range we are talking about a research group of around 125 people, half or more of them technical, the rest technicians, and clerical and service personnel. This is a substantial group, almost beyond the middle-size stage, but still far below the huge staffs of large industrial or governmental research organizations.

Setting Objectives

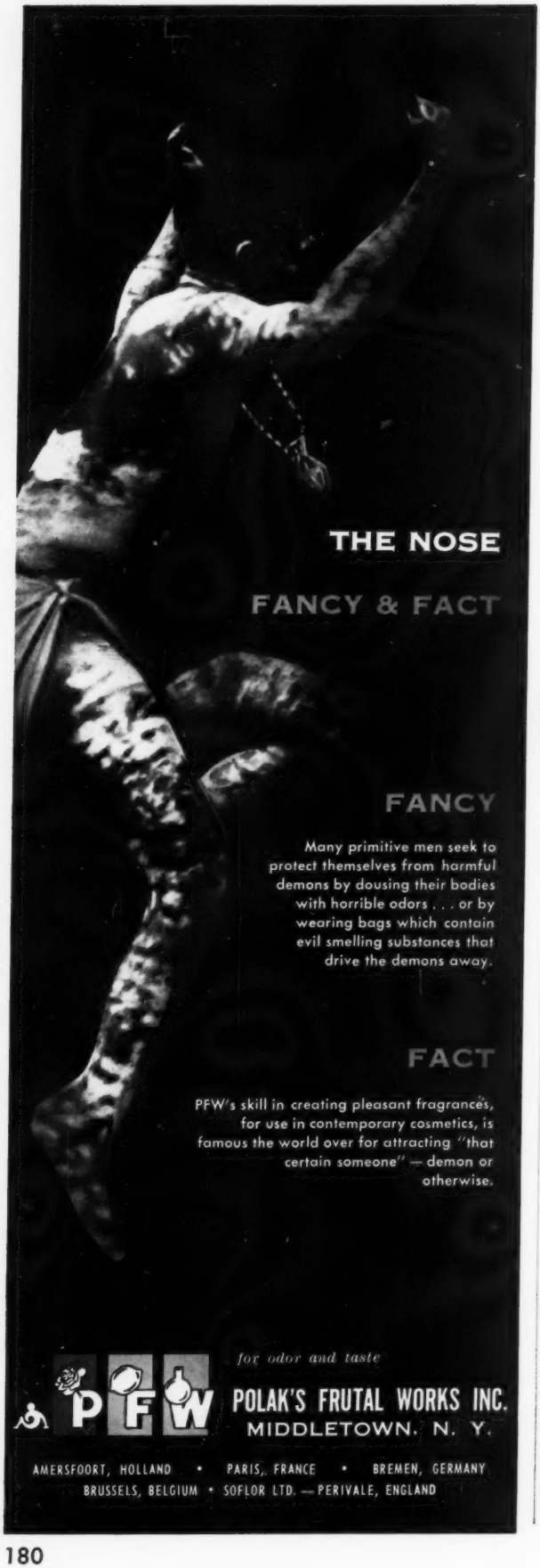
NO research program, large or small, can be very successful without well conceived, clear-cut, and realistic objectives. Unfortunately overzealous research men, consultants, and stock market letter-writers have concentrated too much on the idea of research as a miraculous cure-all for company ills, and spent far too little time defining the type of research that a given company might profitably undertake. Here is an actual case, where an otherwise astute management overlooked this point.

Several years ago the head of an internationally known, middle-sized producer of process equipment decided his company needed a research program. At its main plant the company already had a first-rate engineering department which designed the equipment sold, worked out new applications, and developed some new products. However, the chairman acquired a laboratory some miles from the main plant, and staffed it with a research director, and a small group of physicists, chemists, and engineers. Unfortunately the only instructions given this group were something along the lines, "All right, you scientists, now invent something." Actually the newly established research laboratory did develop one or two ingenious new pieces of equipment, but the overall result of the first five years research was largely confusion and lost motion. Serious bickering developed with the established engineering department. Several research directors came and went, and eventually nearly the whole technical staff left for greener pastures.

In this company, as in a number of others, the basic problem was the chief executive's unqualified faith in an ill-defined concept of "research". It is unfortunate that the useful and simple word research has by now acquired so many emotional over-

Typical view of research laboratory at Shulton, Inc., Clifton, N. J., a middle size company, headed by George Schultz, a chemical engineer who believes in directed research.

* Presented at the 31st annual convention of the Association of American Soap & Glycerine Producers, New York, Jan. 22.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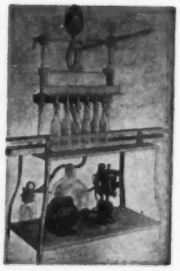

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tones – the advancement of science, men in white, Nobel prizes, and so forth. Most considerations of research lose altitude, but gain momentum as soon as we stop talking about research in general and get down to the specific functions industrial research must accomplish. These are: 1. development of new products; 2. development of new processes; 3. development of new uses for products. It is useful to remember that research is not the only means of carrying out these functions. New products or processes can be acquired by purchase or license or by corporate mergers or acquisitions. New uses can sometimes be developed by a good technical marketing and promotional program.

Most companies are primarily interested in the development of new products, and it is in this activity that the definition of specific research objectives is most important and most difficult. Reducing the desire for new products to a set of specific objectives has become a specialized function in itself, and many large companies have full-time groups to plan products and set research strategy. In the middle-sized company the president, the research director and other members of top management must determine the general criteria for new products, answering such questions as these:

1. How much money can the company spend in carrying a single good project through to completion?
2. What sales volume should a new product attain?
3. Through what distribution channels should the new product move?
4. What type of competition can the company best handle in new products?
5. What type of raw material sources should the new product have?
6. What type of manufacturing load should the new product give the manufacturing organization? (Seasonality, number of grades or sizes, safety, degree of precision or purity required, etc.)
7. In what general fields of technology is the company most experienced and best staffed to develop a new product?
8. What minimum profit standards should a new product meet? (Minimum acceptable gross margin or net return on total investment.)
9. How soon from the start of a research project must the new product attain this minimum profit standard – one year, three years, five years?

Mr. Kline

Product Policy

A WELL-DEFINED product policy, preferably in writing, is especially important to the success of a middle-sized research program where funds and staff are limited and results must be obtained fairly quickly. However, a product policy is only a yardstick. It is useful only if it can be used to measure a constant stream of new ideas for specific research projects.

Characteristically, middle-sized research is largely fed by ideas originating outside the individual research group itself. Few middle-sized companies can afford to do much of the free-ranging, undirected basic research that leads to major scientific advances. The high cost, slow pace, and speculative nature of this kind of research necessarily limit it to universities, the government, and small pioneering groups in very large corporations. Mdidle-sized research focuses on the development of specific products or, at most, specific classes of related products. Within a given technical area even a small research group can develop a unique group of experts capable of leading their particular field. Such a group can make important advances on its own initiative. More importantly, it can draw on, evaluate, and use a wealth of information from raw material suppliers, customers, sales or technical service groups, and from academic and industrial research groups.

Organizing for Results

ATTAINING research objectives requires a sound research organization. Occasionally companies attempt to short-cut the problem of building their own research teams by entrusting their entire research programs to independent research institutes or other outside groups. Although such institutions are invaluable for carrying out parts of a specific program, they can rarely do the whole job as well as the company itself. An inside research staff has closer contact with management, better knowledge of company objectives and industry practices, stronger personal motivations for success, and no distractions from other clients.

When the research group is very small, formal organization is relatively simple. Many small companies have only a single technical group – "*the* laboratory", responsible for chemical analysis, selection of raw materials, and research. This scheme breaks down as soon as any real effort is put into product, process, or use development, as in many ways the qualities desired in a good analytical and control group –steadiness, reliability, precision– do not fit well with the qualities of imagination, enthusiasm, and technical daring that are needed in a development group. Accordingly the first stage of growth is to split research as soon as possible from analysis and control.

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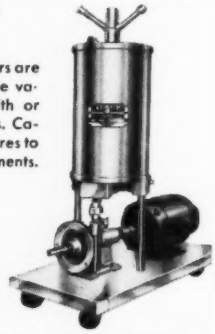

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to divide the research laboratory itself into separate groups to carry out the various research functions: – Improvement of products in present lines and creation of new products within these lines – Technical service to customers – Process development and manufacturing service – Creation of entirely new products. Even where the individual groups are not very large – say, with three to five people in each – this separation makes the job of managing research much simpler. The breakdown of effort put into different functions – for example, product improvement as against new product development – is readily apparent at all times. Also, it is usually easier to find technical men capable of supervising one function, than men capable of supervising effectively several functions at once. More important, the separation focuses each individual worker's attention on the specific job he is assigned. A young Ph.D. chemist, with ideas of "research" formed in graduate school, will generally do better work on a customer service problem if his job is frankly labelled technical service than if it is lumped together with a number of other functions vaguely called "research".

Obviously on a middle-sized budget this proliferation of laboratories cannot continue indefinitely. Generally it is more important to have a small group competent in each major *function*, such as product improvement of technical service, than in each *technique* that may be required – for example, toxicology, ceramics or insecticide testing. Once a problem requiring a specialized technique is well defined, the many independent research laboratories can often come up with a solution far more quickly and more cheaply than a company group. This is nearly always true where specialized equipment and experience are required only intermittently. Unfortunately many research workers are reluctant to use outside facilities, either from distrust of others' results or fear of loss of prestige. It is always tempting to add an entomologist, a toxicologist, or some other specialist to a research group. However, as a rule of thumb the addition is usually justified only when two conditions are met: First, the technology involved is so vital to the company's future that the specialist will have as good a chance for promotion as the regular research staff. Second, the physical facilities required will be utilized fully enough and for a long enough period to be considered a cost saving.

It is important to place the various laboratory groups at the most effective points in the company organization structure. The creation of entirely new products requires time, independence, and close coordination with top management on matters of policy. The laboratory group responsible for this function should have ready access to the company president or executive vice-president. On the other hand, technical service requires very close liaison with sales, and process improvement with manufacturing. In a highly technical company these two groups may report directly to the sales manager and manufacturing manager. On the other hand, where the company's overall operations are not highly technical, as in many consumer goods businesses, it may be better to have all the laboratory groups report to a single technical director.

The physical location of laboratories is an important question in middle-sized companies. Among most large companies and many middle-sized ones there is a strong trend towards isolated research centers some distance from manufacturing plants and company headquarters. Indeed, in many suburban areas the elegant research center is as prominent a feature of the landscape as the chateaux of the Loire or the castles along the Rhine. No one can deny the general advantages of superb working conditions for advanced product development, or independence from day-to-day problems. But for the

middle-size company there is a great deal to be lost by isolating the research groups. Middle-sized research, being largely outer-directed, needs the eyes and ears of the marketing groups. It needs the close coordination of daily informal contact with manufacturing, engineering, sales and management. Finally, although the creative research worker needs independence, he also needs motivation, and there is nothing quite so stimulating as occasionally feeling the hot breath of the factory or sales force down the back of the neck.

Selecting Personnel

THE type of personnel required for any technical program depends largely on the objectives of the program and the organization designed to accomplish them. Here again, we progress further if we consider each man in terms of his specific function rather than by general theories about research people as a group. Research supervision demands a balance of creativity, leadership, technical competence, and commercial experience, qualities that are rarely combined in a single individual. Some one has also said that a good research manager needs fervent enthusiasm, but glacial judgement. To reconcile these opposite qualities we must usually compromise, selecting the best available man for the top job and then giving him subordinates who are strong in his weak points.

In all personnel good middle-sized research requires versatility, the knack for picking up and exploiting outside ideas, and a constant drive towards getting new products on the market or new processes and applications into actual use. Fortunately there is a small but steady supply of people with these traits by selective migration from larger companies. The very large corporations with their extensive recruiting programs and their enormous technical prestige largely monopolize the flow of new graduates into industry. However, after several years of big company experience, many aggressive and competent men seek the faster movement, greater flexibility, and larger sense of personal achievement that small and middle-sized companies offer.

Men from large research organizations sometimes need help in adjusting to the pace and variety of work in the middle-sized company. Here every man must be a jack of at least several trades rather than a specialist in one narrow function. He must often devise his own methods and improvise equipment, or arrange to have work done outside instead of turning over parts of his project to other specialists within the laboratory. Furthermore, he must produce results at the greater speed that is one of the smaller company's greatest competitive advantages. Research workers without these abilities may still be outstanding men in their fields but they are probably not suited to smaller companies.

Perhaps the most difficult problem in staffing a middle-sized research organization is to select men who will grow. Many middle-sized companies expand very rapidly. The chemist or supervisor who did a first-rate job in a small group may be quite inadequate when the laboratories have grown to fifty or a hundred men. At this point the research problems undertaken become larger and more complicated, and the problems of supervision and coordination far greater. Careful selection of personnel initially, training on the job, promotion in a series of small advances, and frequent counseling are the most effective means of ensuring the development of promising men.

Link with Operations

A RESEARCH laboratory is not the sole fount from which new products, new processes or new applications flow out in a golden stream. Rather a laboratory is only one link in a complex chain of functions that includes engineering, manufacturing, commercial de-

(*Turn to Page* 211)

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SOAP PLANT *Observer*

By John W. McCutcheon

EQUIPMENT for the continuous manufacture of toilet soap without milling is described in a brochure published recently by G. Mazzoni S.p.A., Busto Arsizio, Italy. A little more than a decade ago Mazzoni designed a soap drying process which bears his name and which was reviewed in *Soap and Sanitary Chemicals*, May 1947, p. 38. Mazzoni's drying method starts with a finished neat soap. Moisture content is reduced from 30 per cent to the required 12 to 15 per cent by spraying the hot soap into a vacuum chamber, six feet by eight feet, having a convex top and cone shaped bottom. A scraper arm removes the soap from the sides and pushes it into a plodder which extrudes the mass through the bottom. This device, used extensively in Europe, takes the place of the continuous conveyor belt dryer commonly used in America.

The popularity of the latter stems from the fact that such equipment was suitable for producing household and industrial chips and flakes which were important soap products twenty years ago. A conveyor belt type dryer therefore could be used alternately on a number of products. With the market on flakes and chips nearly zero, factors favoring the Mazzoni drying process for toilet bars over conventional dryers have steadily increased.

The writer would certainly favor the Mazzoni continuous toilet soap manufacturing process in considering a modern plant layout. The process, as described, does not greatly differ in some respects from certain American equipment which the writer has seen in use and which is based on independent patents. Mazzoni's equipment is designed to take the extruded soap from his dryer and

convert it continuously into bar soap without use of mills. He effects this by means of two plodders, a continuously operated amalgamator, and two additional plodders. The last plodder forms the final bar which is fed to an automatic cutter.

Use of plodders to replace mills in toilet soap production is not new. One large soap plant where the writer worked more than twenty years ago made one toilet bar product by this method. In this case, a batch amalgamator using soap chips, started the operation. The soap then passed, cascade fashion, through a series of four or more refining plodders, then to a final plodder and hence to a continuous bar cutter. The objection to this process was a definite grain structure in the product, evident when the cold stamped bar was broken lenghtwise along this grain. However, in certain types of soap this phenomenon was not objectionable. One plodder manufacturer heard of this system rather belatedly and attempted for a few years to beat the drum loudly in favor of no mill processing.

The Mazzoni process follows a different pattern: Mazzoni only partially dries the soap in his initial vacuum chamber, raising the fatty acid content from 63 per cent to 72 per cent which is equivalent to drying the soap from approximately 30 per cent to 21 per cent. With this high moisture content it passes through the first plodder and emerges into a vacuum chamber where temperature and vacuum are so adjusted that the soap loses another 3 per cent moisture, raising its fatty acid content from 72 to 75 per cent. It then passes to the second plodder where it is formed into pellets and transferred by conveyor belt to the continuous amalgamator. This is not described in detail since the type of operation would depend largely on the formulation. It is not difficult to visualize an automatic poidometer type system with perfume spray, etc., which would adequately control a standard formula.

A vacuum system between the final two plodders removes another three to five per cent moisture, raising the fatty acid from 75 to 78 to 80 per cent and giving a final moisture content somewhere between 13 and 15 per cent. The reader should note that the soap remains high in moisture and relatively hot throughout the preliminary plodding steps which would be conducive to eliminating bar grain.

The designers of the process claim that, by working the soap in the warm plastic state less power is required and the soap is converted 100 per cent into the Beta-form. At any rate, the principles of operation are extremely interesting and indicate advanced thinking on the subject.

While mills cannot be made to function properly with high moisture content soap, they do a fine job dispersing solids into the soap such as titanium dioxide, for example. It is difficult to believe that one preliminary and one final plodder after amalgamation could do the dispersing job of three five-roll mills. The dispersing job would have to be done in the automatic amalgamator and it is the writer's opinion that most of the success of the Mazzoni process

for exacting production schedules . . .

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would lie in the efficiency of that unit.

The cut bar soap passes through a skin drying tunnel to the press, then through a cooling tunnel and finally to the wrapper. Inclusion of these tunnels is interesting. No doubt the higher plodding temperatures necessitate their use. On the other hand, the innovation indicates the measure of care taken to see that the finished product is in immaculate condition when packed.

Manufacture of 100 pounds of toilet soap requires approximately 18 pounds of steam; 120 gallons water; 4.5 kwh electricity, and 0.1 hours of labor.

Certain fringe benefits are claimed for the process: The amalgamator and following pair of plodders may be eliminated for manufacture of household laundry soaps. Transparent soap may be made by reducing the fatty acid content to 72 per cent by means of vacuum-temperature control. Milled soap flakes can be produced by taking 82-84 per cent fatty acid flake off the second plodder and conveying it directly to a mill.

A better understanding of the process may be achieved by studying the accompanying projection of the plant with correlated parts.

Book Reviews

(From Page 173)

is the first such publication by our German contemporary. Industries served include oils, fats, soaps, detergents, toiletries, waxes, and other specialties. The first section is devoted to survey type articles pertaining to these fields. Included are among others a contribution by H. Manneck on the uses of cationic and amphoteric substances and nonionic combinations; an article on builders in soap; a German patent covering bar form synthetic detergents; and a paper on furniture polishes in industry and household by F. Ohl.

The second section consists of a formulary containing recipies in all the above indicated fields. The third and largest part is devoted to information presented in tabular form. The tables are subdivided into the major industrial fields served by the publication. New perfume compositions are listed and briefly described in the fourth part. This is followed by a list of trade and scientific associations, international, German, and in other countries. The list of books published in 1957 is particularly well arranged according to spheres of interest on which they have bearing. A buyers' directory is appended.

This handy pocket size encyclopedia offers a wealth of well organized data, which should prove useful to anyone engaged in the specialties industries. Since so much of its contents is either tabulated or listed, it can be consulted by anyone knowing a little German.

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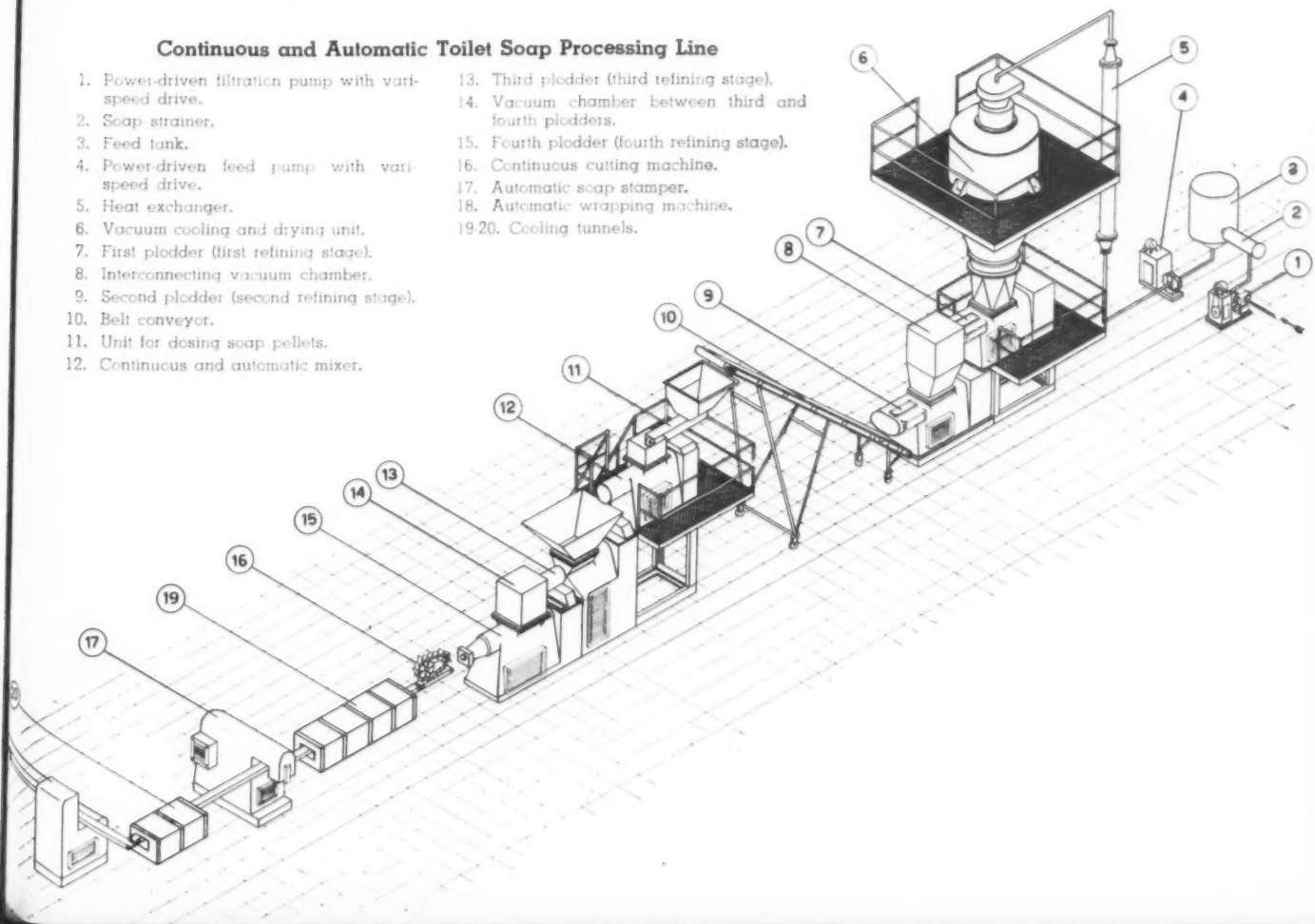
8. Interconnecting vacuum chamber.
9. Second plodder (second refining stage).
10. Belt conveyor.
11. Unit for dosing soap pellets.
12. Continuous and automatic mixer.
13. Third plodder (third refining stage).
14. Vacuum chamber between third and fourth plodders.
15. Fourth plodder (fourth refining stage).
16. Continuous cutting machine.
17. Automatic soap stamper.
18. Automatic wrapping machine.
19-20. Cooling tunnels.



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plexing or chelating agents capable of forming water-soluble complexes with radioactive agents. Such chelating agents are, for example, citric acid or a citrate. The composition should also include a water-soluble electrically active powder possessing a high electrical interfacial or zeta potential opposite to that of the ionic charge of the elements comprising the contamination. British patent 776,148 (1957) National Research Development Corp., London.

★

Compound and Odor

Molecular Structure and Organoleptic Quality, comprising papers read at a symposium organized by the Overseas Section of Society of Chemical Industry, London, and held in Geneva, Switzerland, May 1957. Cloth covered, eight and one half by five and one half inches, pp. 124, price $3.75. Published as S.C.I. Monograph No. 1, by the Society and Macmillan.

The symposium presented in this volume consists of eight contributions by some of the greatest authorities on perfume chemistry and odor perception: "Facts Old and New Concerning Relationships Between Molecular Structure and Odour", by Max Stoll, Firmenich & Co., Geneva; "Physiology and Genetics of Organoleptic Perception" by H. Kalmus, University College, London; "Tentatives de Mesure de L'Intensite de L'Odeur", by J. Sfiras and A. Demeilliers, Roure Bertrand Fils et Justin Dupont, Argenteuil, (Seine et Oise); "The Relationship Between the Stereochemistry and Odorous Properties of Organic Substances, by Y.R. Naves, L. Givaudan et Cie., Vernier-Geneva; "Structure and Odour", by M. G. J. Beets, Polak & Schwarz, Hilversum, Holland; "Odour and Molecular Vibration", by R. H. Wright, British Columbia Research Council, Vancouver 8; "Some Comments on Theories of Smell", by H. W. Thompson, St. John's College, Oxford; and "Fundamentals of Odour Chemistry: A Summary", by L. Ruzicka, Federal Institute of Technology, Zurich.

New Continental Brochure

Advantages of multiple packaging of liquid detergents, cleansers and related specialties are featured in a new 36-page brochure issued recently by Gair Boxboard and Folding Carton Division of Continental Can Co., 530 Fifth Ave., New York 36. Fully illustrated, the booklet also provides information on Continental's hand-loaded "Can-Trak" and machine loaded "Jak-Et-Pak" cartons. A checklist of products suitable for multiple packaging is also included in the brochure.

★

Horix Issues Bulletin

A new eight page brochure was published last month by Horix Manufacturing Co., Corliss Station, Pittsburgh 4, describing the firm's latest line of liquid and semi-liquid filling equipment. The material presented in the illustrated two color folder is grouped into gravity and gravity-vacuum type fillers. Both methods of fill are outlined in detail. Other information includes filling capacity, type of containers, and materials handled by the individual models.

★

New Stokes Bulletin

The vacuum equipment division of F. J. Stokes Corp., 5500 Tabor Road, Philadelphia 20, recently issued a four-page bulletin describing its line of drum dryers and flakers. The illustrated folder includes a chart listing sizes and specifications of the equipment. Designed for the drying and solidifying of liquid or molten materials the units feature chromium-plated surfaces, flexible doctor blades, and multi-point adjustment of the end dams.

★

Horix Names Fairbanks

Appointment of Frank B. Fairbanks, Jr., as administrative assistant for Horix Manufacturing Co., Pittsburgh, manufacturers of liquid filling equipment, was announced recently. In this post, Mr. Fairbanks will be concerned with development of new product lines. He formerly served for five years with the nuclear energy department of Alco Products Corp., Schenectady, N. Y.

Horix Manufacturing Co. was founded by Frank Fairbanks' grandfather, Otto Horix. Later it was managed by Frank's father, Frank B. Fairbanks, Sr., and presently by his mother, Mrs. Helen Horix Fairbanks.

★

New D&O Division Name

Dodge & Olcott has changed the name of its dry solubles division to dry materials division, it was announced last month. The division will now process spray dried flavors at its recently expanded Hawthorne, N. J., plant. Director of the plant is William F. Ammon. Bryan J. McCabe is assistant director and Robert T. Maleeny chief chemist. William D. Rosenberger is manager of the unit.

★

Mather Joins Emulsol

T. William Mather has joined the sales staff of Emulsol Chemical Corp., Chicago, a division of Witco Chemical Co., New York, it was announced recently. Mr. Mather will headquarter in Akron, O. His territory will include Ohio, western Pennsylvania, upper New York state, West Virginia and eastern Kentucky. He was formerly with Colton Chemical Co., Cleveland, as manager of product development and marketing research. Prior to that, he was technical representative for the chemical division of Atlas Powder Co., Wilmington, Del.

New Patents

(*From Page* 175)

to 11.6 parts of ozokerite wax, the repellent comprising about 30 percent 2-ethylhexanediol-1,3 and about 70 percent of a member selected from the group consisting of 2-ethylhexanediol-1,3, ortho-dimethyl phthalate, 2-cyclohexylcyclohexanol, 2-phenylcyclohexanol and mixtures thereof, the fatty acid being a mixture of stearic acid and palmitic acid containing from about 26 parts to 70 parts of stearic acid, all parts by weight, said stick being substantially free of water and alcohol.

Like Hundreds Of Other Chemical-Specialty Manufacturers,

YOU CAN COUNT ON

Colgate For Quality Ingredients

As a pioneer in the soap business—famous for quality products since 1806—you can count on Colgate as a source of quality soaps and synthetic detergents for use in the manufacture of chemical-specialty products.

Colgate products of special interest to you include:

MENTOR BEADS—
an alkyl aryl sulphonate synthetic detergent in spray form. For use in industrial cleaning, processing, compounding. Can be colored and perfumed as desired.

ARCTIC SYNTEX 036—
a 100% liquid non-ionic surface active agent. For use in chemical-specialty manufacture where an economical and efficient wetting, penetrating, emulsifying and cleaning agent is desired.

For samples and technical data, write today to our Associated Products Department. There is *no cost* or obligation! Or, get in touch with your local Colgate-Palmolive representative.

Colgate-Palmolive Company, 300 Park Avenue, New York 22, N.Y.

News...

PEOPLE • PRODUCTS • PLANTS

Jay Joins L. A. Soap

* * *

Deupree on "Slowdown"

* * *

Stanley Names Sheely

* * *

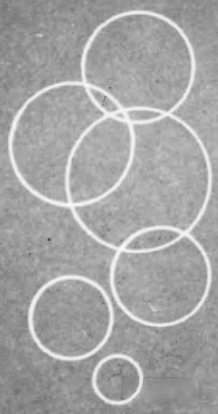
Colgate Earnings Rise

C. C. Overstreet, just appointed to the newly created post of national sales manager of Purex Corp., South Gate, Calif., formerly was director of domestic sales. Before joining Purex in 1953, he was with Safeway Stores, Inc., for 16 years.

PILOT HD-90
DETERGENT FLAKE

MORE SUDS FOR YOUR MONEY

HD-90 helps you to build more suds into your detergent products than any other material at a competitive price. And more sudsing power means greater consumer acceptance.



HD-90 works fine even in hot, humid weather: all-weather protection to keep production rolling along in high gear. All-weather protection for your products, too.

HD-90 is purer—contains more active ingredient and less sulfate—it's hardworking, yet odorless and whiter in color. HD-90 is dust-free and dry flowing.

The uniqueness of Pilot's new standard of purity is in the *Cold Processing:* eliminated are the undesirable characteristics; built in are the cleansing and foaming character.

HD-90 has greater versatility as a result of its higher concentration, an advantage in formulating: *Automotive Cleaners, Dishwashing Compounds, Household Cleaners, Steam Cleaners, Bubble Baths, etc.*

For products with the highest sudsing and cleansing power for your money—investigate Pilot HD-90. Packed in polyethylene-lined fibre drums and 5-ply paper bags. Formulas and samples yours for the asking. Write:

LEADS THE WAY TO BETTER PRODUCTS
PILOT

PILOT *California Co.*

215 WEST 7th STREET • LOS ANGELES 14, CALIFORNIA

Manufacturers of
Sulfonic Acid
Dodecyl Benzene Sulfonates
Sodium Toluene Sulfonate

News

Stanley Names Sheely

Harold P. Sheely has been named promotion sales manager for Stanley Home Products, Inc.,

Harold P. Sheely

Westfield, Mass., it was announced recently by Foster L. Goodrich, vice-president in charge of sales. Formerly Michigan district sales manager, Mr. Sheely joined Stanley in 1946. He served as a unit sales leader and as branch sales manager in Toledo and Dayton before assuming his most recent post early in 1954.

In his new capacity, Mr. Sheely will coordinate the various promotional campaigns used by Stanley in working with the many dealers and managers who sell the company's line of 250 household products and grooming aids through the hostess party plan. He will headquarter at the Westfield home office.

★

Purex Names Overstreet

C. C. Overstreet has been appointed to the newly-created post of national sales manager of Purex Corp., Ltd., South Gate, Calif., it was announced recently by John B. McLaughlin, vice-president of sales. Mr. Overstreet formerly was director of domestic sales. He joined the company in 1953 as assistant manager of the southwest division. Prior to that, he was associated with Safeway Stores, Inc., for 16 years, the last 13 of which were spent as manager of the Dwight Edwards Coffee Co., Dallas, a division of Safeway.

★

New Stepan Offices

Stepan Chemical Co., Chicago, last month moved its general offices and laboratories to new quarters at 427 West Randolph St., Chicago. The company's offices formerly were located at 20 North Wacker Dr.

Ninol Laboratories, Inc., recently purchased by Stepan, also moved its general offices to the new address. Ninol formerly was located in Prudential Plaza. Within the next few months the research and development laboratories of both Stepan and Ninol will be consolidated into one unit.

★

Jay to Los Angeles Soap

William Jay has joined Los Angeles Soap Co., Los Angeles, as executive vice-president, it was announced recently by Andrew K. Forthmann, president and board chairman. The post had been vacant since Mr. Forthmann's appointment to the presidency in September, 1955. Mr. Jay had been with Squirt, Van Nuys, Calif., soft-drink manufacturer, for 17 years.

William Jay

Reed to Hollingshead

Merritt Reed has been appointed as sales representative for the maintenance chemical division

Merritt Reed

of R.M. Hollingshead Corp., Camden, N.J., it was announced recently by Richard S. Moseley, division sales manager. Mr. Reed will cover the New England states and upper New York state. He formerly was sales manager of Amston Plastic Engineering Corp.

★

Beach Names Two Reps.

Beach Soap Co., Lawrence, Mass., recently announced the appointment of two new distributors. F. H. Ross & Co., Charlotte, N. C., will represent Beach in North Carolina and Craig Supply Co., Durham, N. H., has been named sales distributor in New Hampshire. Both firms will handle the entire Beach line of laundry products, including "Prime SOHP," "Phosrite," and "Hycon."

★

New Bon Ami Agency

Weiss & Geller, Inc., New York, has been appointed as advertising agency for Bon Ami Co., New York, it was announced recently. The new agency will be responsible for a completely revised advertising and promotion plan which will place increased empha-

sis on the company's all-purpose aerosol cleaner, "Jet Spray Bon Ami." The expanded promotional campaign will include all media, with particular stress on newspapers and television.

—★—

Colgate Earnings Higher

Consolidated income of Colgate-Palmolive Co., New York, in 1957 rose sharply to $19,930,000, equal to share earnings of $7.81, from $15,477,000 and $6.04, in the preceding year, according to a statement released last month by E. H. Little, president and board chairman. Domestic earnings also showed a substantial rise to $14,419,000, equal to $5.60 per share, as against $10,518,000, equal to $4.05 per share reported in 1956.

World wide sales for 1957 totaled $506,910,000 as compared with $508,523,000 in the previous year. Mr. Little said that domestic sales were lower than in the preceding year, due in part to the termination of the company's contract with Chesebrough-Pond's, Inc., New York, covering distribution of "Vaseline" products. Foreign sales, however, climbed to a new record.

—★—

Albert Scharwachter Dies

Albert A. Scharwachter, 61, executive vice-president of Arizona Chemical Co., New York, died Feb. 14 in an accident at Winter Park, Fla. His home was in Garden City, N. Y.

Mr. Scharwachter began his career in the chemical industry in 1911 with A. Klipstein & Co., New York, and later transferred to American Cyanamid Co., New York, when the two firms merged. In 1952 he was appointed sales manager of Arizona Chemical Co., a subsidiary of Cyanamid and International Paper Co., New York. He was elected a vice-president in 1953 and executive vice-president in 1956. He was a native of Brooklyn, N. Y. and attended Cooper Union. Since 1955 he was president of the Pulp Chemicals Association.

Surviving are his wife, Mrs. Bertha Scharwachter; a son, Albert; his father and two grandchildren.

Deupree on Slowdown

The current slowdown in the U. S. economy is an "essential correction" of accumulated problems and is no reason for pessimism about the basic strength of the nation, Richard R. Deupree, board chairman of Procter & Gamble Co., Cincinnati, said recently.

Richard Redwood Deupree

Speaking before the Los Angeles Rotary Club at the Hotel Statler, Mr. Deupree expressed confidence that the U. S. will come out of the present situation in a stronger condition and be ready to make the next 10 years "a new mile-post" of growth.

"We ran hard and fast after World War II," Mr. Deupree said. "Considering the miraculous results of the post-war years, how could we help taking a rest? Or call it a recession, if you wish. But look at where we have recessed from: a peak greater than anyone could have imagined 10 years ago.

The P&G executive added that Russia's Sputniks and the recession had a net result" more good than bad."

"These things have slapped hard at our complacency and gave us a sense of jeopardy," he declared. "Out of them we get new strength and unity of purpose."

—★—

Shulton Names Two

George Foy has been named commercial development manager and Kenneth Hanover manager of process engineering for the fine chemicals division of Shulton, Inc., Clifton, N. J. Mr. Foy will be responsible for advertising, sales promotion, market research and preparation of new markets. Mr. Hanover will supervise activities in the chemical laboratory, the pilot laboratory and development engineering.

—★—

Glamur Products Dividend

Glamur Products, Inc., Syracuse, N. Y., manufacturers of rug and upholstery cleaners, recently declared a five per cent dividend payable to its common stockholders. This is the first dividend since the company became publicly owned three years ago. Since then, gross sales climbed from $100,000 to $1,000,000 in 1957, according to Jack Hosid, president.

—★—

GPA Awards Scholarship

A $6,000 fellowship, provided by the Glycerine Producers' Association for support of research contributing to the knowledge and understanding of glycerine and its reactions, has been awarded to Stanley Levy, a graduate assistant in chemistry at Case Institute of Technology, Cleveland. Mr. Levy was appointed by Dr. Kenneth T. Glennan, Case president. Results of the glycerine research, which will be carried on by Levy in connection with his work toward a Ph.D. in chemical engineering, will be published in a thesis.

—★—

Frederick Dehls Dies

Frederick Dehls, 58, executive vice-president of Benzol Products Co., Newark, N. J., manufacturer of industrial chemicals, died at Presbyterian Hospital, Newark, Feb. 8, after a long illness. Mr. Dehls had been with the firm since 1925 and was also executive vice-president of Dehls & Stein, manufacturer of brewing supplies. He was a former second vice-president of the Synthetic Organic Chemical Manufacturers Association. Included among the survivors is his son, Allan W., who is associated with Benzol in a sales and administrative capacity.

Record Avon Sales

Avon Products, Inc., New York, last month announced that during 1957 it had achieved the largest sales and earnings in its 71-year history. Net sales totaled $100,379,694, an increase of about 16 per cent over the 1956 figure of $86,826,432, which was the previous high. Net earnings in 1957 equaled $3.05 per share. This represents a 15 per cent gain over the $8,127,271, or $2.65 per share in the previous year. Dividends paid on common stock last year totaled $1.25 per share compared with $1.05 in 1956.

★

Russell Stoddard Retires

Russell B. Stoddard, formerly manager of the Fairfield Chemical Division of Food Machinery and Chemical Corp., New York, announced last month his retirement from active service with the company. He will, however, continue with Fairfield on a part-time basis as a consultant on pyrethrum chemicals and related pesticide materials.

Since August 1955, Mr. Stoddard, a national authority in the field of pyrethrum chemicals, has served on the technical staff of FMC's chemical divisions' administrative offices. Previously associated with U. S. Industrial Chemicals Co., Division of National Distillers Products Corp., New York, as coordinator of insecticide operations, Mr. Stoddard became manager of that firm's pesticide division when it was acquired by FMC in August, 1954 and established as the Fairfield Chemical Division.

As a part-time consultant, he will be called upon to contribute to various phases of the firm's insecticide program, including manufacture of organic pesticide materials, development and promotion of new applications in the insecticide field, and refinements in aerosol applications.

Russell B. Stoddard

★

Leeds Chemical Sold

A group of Chicago businessmen headed by Bernard H. Hoffman, recently purchased Leeds Chemical Products Co., Chicago, for an undisclosed amount of cash. Complete details of the transaction were not disclosed. Mr. Hoffman, formerly secretary and treasurer of Leeds, becomes president of the new organization, succeeding Harold R. Sugarman. The company manufactures "M-O-Lene" rug and upholstery cleaner, and "Wool-O-Lene," a cold water fluff-soap.

★

NYSCC Ladies' Night

The New York Chapter of the Society of Cosmetic Chemists will hold its annual Ladies' Night Dinner at the Park Avenue Brass Rail Restaurant, New York, Apr. 2. George Kachajian, Dow Corning Corp., will serve as chairman.

Dr. Paul Becher, project leader in surface chemistry at the central research laboratory of Atlas Powder Co., Wilmington, Del., was feature speaker at the organization's February meeting, which was held at the Park Avenue Brass Rail. Dr. Becher's topic was "The Effect of the Nature of the Emulsifying Agent on Emulsion Inversion."

★

Werner Heads NBBB

William G. Werner, director of public and legal services for Procter & Gamble Co., Cincinnati, recently was elected chairman of the board of the National Better Business Bureau, Inc., at a meeting of the bureau's executive committee in New York. He succeeds Warren C. Agry, who died in January.

Carroll Joins Lever

Thomas S. Carroll, formerly manager of the household products division of Colgate-Palmolive Co.,

Thomas S. Carroll

New York, has joined Lever Brothers Co., New York, as general manager of marketing services. The position is a newly-created one. Mr. Carroll will assist the company's marketing divisions in planning advertising and marketing programs.

In his most recent post at Colgate, Mr. Carroll was in charge of the household products division's advertising, sales promotion, packaging, media, and all other aspects of marketing, other than sales. Prior to that, he was a brand manager. At one time he had been associated with George Fry & Associates, Inc., marketing consultants, as a vice-president in the marketing division.

★

Lehn & Fink Names Two

Richard S. Seclow and Victor A. Pizzolato have been named brand managers in the Lehn & Fink Division of Lehn & Fink Products Corp., New York, it was announced recently by Emanuel Goren, division manager. Both men previously were product managers.

Formerly in charge of merchandising and sales promotion for "Lysol" disinfectant, Mr. Seclow now adds advertising to his responsibilities for that product, as well as new products to be intro-

IODINE SANITIZERS

OFFER ALL THESE ADVANTAGES

A LONG RECORD OF DEPENDABILITY. Iodine is recognized as a most efficient antiseptic and germicide. It is known to be effective against a wide range of organisms.

SPECIALIZED PRODUCTS. Iodine sanitizers and detergent-sanitizers are offered by leading manufacturers for treatment of milk, food and beverage utensils and equipment. Also available are iodine disinfectant-cleaners for hospitals, schools, institutions, food and beverage plants, and industrial applications.

EFFECTIVE. Iodine preparations are effective in low concentrations . . . economical, too. Their use can contribute to improved public health.

EASY TO TEST. The well-known iodine color is an indication of solution strength. When the color of an iodine sanitizing solution begins to disappear, that is a signal to replenish or replace the solution. There is no reason **ever** to let an iodine solution get too weak to be effective. Test kits are available.

Write us for further information. No obligation, of course.

CHILEAN IODINE EDUCATIONAL BUREAU, INC.

Room 2148, 120 Broadway, New York 5, N. Y.

duced by the division. Before his appointment as product manager, he had been assistant merchandising manager of the division.

Mr. Pizzolato previously had supervised all marketing of "Etiquet" deodorants and "Hinds Honey & Almond" fragrance cream. Prior to his appointment to that post in January, 1957, he had been assistant manager of these two products. In his new capacity, he assumes full charge of advertising for the products in addition to his previous responsibilities.

★

New Colgate Appointments

Appointment of C. H. Judge as field sales manager and of Donald D. Madden as north central regional manager of the household products division of Colgate-Palmolive Co., New York, was announced last month by William T. Miller, division vice-president. Mr. Judge, who had been St. Louis district manager, succeeds Eugene E. Buckner, who recently was appointed general sales manager.

Mr. Judge joined Colgate-Palmolive in 1940 as a salesman in the San Antonio, Tex., district. In 1941 he was appointed supervisor of the Omaha, Neb., district. In 1946 he became south central regional supervisor and shortly thereafter he moved to St. Louis as district manager.

In his new capacity, Mr. Madden will headquarter in Chicago. He joined the company in 1933 as a salesman in Cincinnati where he became supervisor in 1937. He was appointed north central regional supervisor in 1947 and later that same year became manager of the Cleveland district. In 1950, he was named manager of the Cincinnati district and in 1956, manager of the New York district. He is succeeded in the latter post by Norman A. Smeby, who formerly was Cleveland district manager.

At the same time, the company announced the appointment of Remus A. Harris to the newly-created position of new products manager of the toilet articles division. Mr. Harris who reports to C. Guy Grace, division vice-president, is responsible for development of new products. Prior to joining Colgate, he was an independent marketing consultant.

Richard Seclow

Victor Pizzolato

From 1952 to 1955, he was associated with Biow Co., New York advertising agency.

C. H. Judge

Donald D. Madden

★

New du Pont Sales Section

A new sales development section recently was established by the explosives department of E. I. du Pont de Nemours & Co., Wilmington, Del., to provide technical service to customers and develop sales for its chemical and specialty products. It will be headed by Marshall F. Acken, formerly manager of the chemical sales section. Henry H. Herring, manager of technical service and development in the chemical sales section, has been named assistant manager of the new department. Dr. Acken is succeeded in his former post by Herman R. Woodall, previously assistant manager of the section. William Reynolds, a product manager, has been appointed assistant manager.

★

DuBois Leaves $4,000,000

Tunis DuBois, founder and president of DuBois Co., Cincinnati, who died last November, left an estate valued at $4,121,794, it was reported last month in an inventory filed in Probate Court, Cincinnati. Mr. DuBois founded the concern in 1920 and served as president for 37 years. He was succeeded in that post by his son, Charles A. DuBois. The company manufactures industrial and institutional cleaning compounds.

DON'T LET THIS HAPPEN TO YOU!

RID yourself of needless business worries *before* they drive you to distraction. As a start in the right direction, why not let our staff of perfume specialists assume full responsibility for your product's fragrance? After all, it's their business to be fully informed—to have expert, up-to-the-minute knowledge of all things pertinent to fragrance—formulations, fashion trends, quality and availability of basic materials, etc. What arrangement, then, could be more practical than to let FRITZSCHE supply you with panel-tested fragrances, tailor-made by specialists for your aerosol, toilet goods or household specialty, subject, of course, to your own final selection and approval? If you'll allow us, we know we can lighten your day-to-day business load—*at least, partly!*

FRITZSCHE *Established* 1871 *Brothers, Inc.*

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES *and* °STOCKS: *Atlanta, Georgia, Boston, Massachusetts, °Chicago, Illinois, Cincinnati, Ohio, °Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri, Montreal and °Toronto, Canada and °Mexico, D. F.* FACTORY: *Clifton, N. J.*

—*ALWAYS DEPENDABLE*—

ODORANTS and DEODORANTS for INDUSTRIAL and TECHNICAL USE

▲

MADE-TO-ORDER FRAGRANCES for PERFUMES, TOILETRIES and COSMETICS

▲

SUPPLIERS of ESSENTIAL OILS, AROMATIC CHEMICALS, BASIC PERFUME and FLAVOR RAW MATERIALS

Babbitt Appoints Mera

John T. Mera has been appointed controller of B. T. Babbitt, Inc., New York, it was announced last month by Marshall S. Lachner, president. Mr. Mera formerly was controller of S. H. Pomeroy Co. In his new post, he will be in charge of all accounting and general office functions.

John T. Mera

★

Colgate Names Coneybear

Appointment of Savery F. Coneybear to the newly-created post of director of new products development of Colgate-Palmolive Co., New York, was announced earlier this month by Dr. John R. Brown, vice-president of research and development. Mr. Coneybear formerly was director of research.

In his new capacity, Mr. Coneybear will be responsible for evaluating new product ideas and for developing a new products program, both within and outside the company, to encourage individual inventors and companies to submit new products and processes to C-P for development.

Savery F. Coneybear

★

Hance to Jefferson

James C. Hance has joined the commercial development division of Jefferson Chemical Co., Houston, Tex., as manager of market research, it was announced recently by Donald L. Griswold, general manager of marketing. Mr. Hance formerly served in the market research department of American Cyanamid Co., New York.

★

Babb Neptune Director

Jervis J. Babb, chairman of the board of Lever Brothers Co., New York, has been elected a director of Neptune Meter Co., New York. The company produces measurement and control instruments for use in general industry processing.

Jervis J. Babb

★

Nuodex Names Philipbar

William B. Philipbar, Jr., has been appointed products sales manager of the stearates division of Nuodex Products Co., a division of Heyden Newport Chemical Corp., New York. Mr. Philipbar will supervise expansion of the company's stearate manufacturing facilities and the division's research program.

Emery Names Tucker

Malcolm R. Tucker has been appointed fatty acid sales representative for Emery Industries, Inc., Cincinnati, it was announced recently by G. W. Boyd, fatty acid sales department manager. Mr. Tucker will be responsible for sales of Emery's complete line of fatty acids in West Virginia, eastern Indiana, Kentucky, southwestern Michigan and all of Ohio, except the northeast section. With the company for 10 years, he was a supervisor in the production department prior to his recent appointment.

Malcolm R. Tucker

★

Meyer Named Sonneborn VP

Appointment of Erich Meyer as vice-president of L. Sonneborn Sons, Inc., New York, was announced recently. Formerly director of industrial research, Dr.

Erich Meyer

Another new development using

B.F.Goodrich Chemical *raw materials*

NOW...CARBOPOL 934

makes oil-water emulsions

★ EASY TO PREPARE ★ WIDE VISCOSITY RANGE
★ EXCELLENT WATER RESISTANCE
★ SPREAD LIKE MAYONNAISE

MANY uses have been made of Carbopol 934 as an emulsion *stabilizer.* Now this versatile material can be used to *both emulsify and stabilize* oil and water formulations with a wide range of viscosities. Less than 1% Carbopol 934 need be used for high viscosity emulsions containing as much as 50% mineral oil in water.

Oil-water emulsions made with Carbopol 934 have excellent stability to mechanical shear and temperature aging. Films from these emulsions have excellent water resistance. A wide range of cosmetic and industrial products can benefit from these properties, since Carbopol 934 has been used successfully to emulsify mineral oil, corn oil, linseed oil, kerosene, hexane, and similar liquids in water.

For complete information write *now* to Dept. RC-2, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

Good-rite CHEMICALS

B.F.Goodrich Chemical Company
a division of The B.F.Goodrich Company

B.F.Goodrich GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors

Meyer will continue to be responsible for the company's industrial research activities. He joined Sonneborn in 1926 as a chemical engineer, and shortly thereafter was named superintendent of manufacture at the company's Petrolia, Pa., refinery. He later was placed in charge of the department of industrial research. Sonneborn produces waxes, automotive specialties and petroleum sulfonates.

★

Jefferson Advances Two

Joseph K. Goerner has been named manager of specialty products and Ben C. Hayton, manager of glycol products for Jefferson Chemical Co., Houston, Tex. Both positions are newly-created ones. Mr. Goerner had been assistant to the general manager of the research and development department. He joined Jefferson in 1946. In his new capacity, he will be concerned primarily with surface active agents, ethanolamines, morpholine and similar products. Mr. Hayton has been marketing manager since 1956. He joined Jefferson in 1946. He will handle ethylene, ethylene oxide and glycol products.

★

Arizona Tall Oil Contest

A new tall oil promotion contest will be the feature of the 1958 industrial advertising campaign of Arizona Chemical Co., New York. The contest, which was announced last month in trade magazines covering a cross-section of the chemical industry, offers a prize for winning entries of a 55-gallon drum of any one of the company's "Acintol" tall oil products, or its equivalent in cash. Entries must include "interesting examples of how the entrant is using Arizona's tall oil products in new and effective ways." All winning entries will be used in future Arizona tall oil advertising.

★

Mitchell to C-P Board

Election of Burnham L. Mitchell to the board of directors of Colgate-Palmolive, Ltd., Toronto, was announced recently by J. M. Stevenson, president. Mr. Mitchell is vice-president and director of the Royal Bank of Canada, and is a director of the Montreal Trust Co. and the Inter-Canadian Corp.

★

Annual luncheon meeting of the Cosmetic Career Women, held last month at the Starlight Roof of the Waldorf-Astoria Hotel, New York, featured a discussion on "Make-Up," by Miss Ainslee Arenas, training school director for Charles of the Ritz, Inc. More than 175 women in the cosmetic industry attended the meeting. Seated on dais are, left to right: Carol Sweeney, Harriet Hubbard Ayer Division of Nestle-LeMur Co.; Martha Rice, Dorothy Gray, Ltd.; Ida Forth Miller, Helena Rubenstein, Inc.; Sybil Mason, Chesebrough-Pond's, Inc.; Miss Arenas; Kay Colton, Morningstar-Paisley, Inc., luncheon chairman; Anna Figsbee, Avon Products, Inc.; Marie Copleston, Tussy Cosmetiques; and Amelia Bassin, Faberge, Inc.

Carbide Names Marshall

John K. Marshall has been appointed New York district sales manager for Union Carbide Chemicals Co., New York, it was announced recently. Mr. Marshall formerly was Cleveland district manager. He will be succeeded in that post by Herbert H. Noren, who previously had been Cincinnati district manager.

Other sales appointments announced by the company include Richard G. Metz, Cincinnati district manager; William Samson, Indianapolis district manager; Richard P. Bannon, assistant Detroit district manager; and Charles F. Gray, Detroit technical representative.

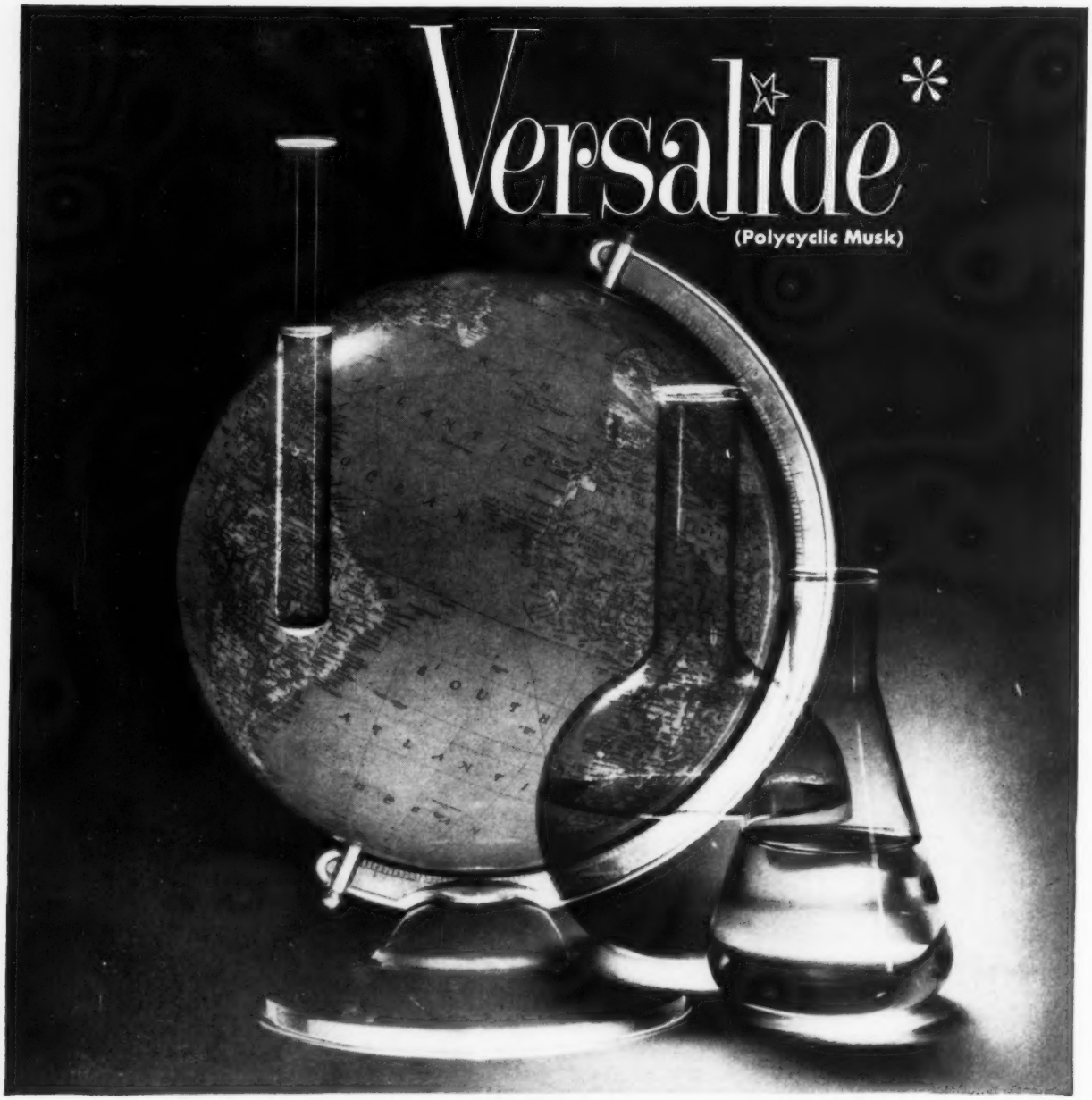
Mr. Metz previously was district manager in Indianapolis, while Mr. Samson was assistant manager in Detroit. Mr. Gray formerly had been technical representative in Philadelphia.

★

SCC Committee Chairmen

The following have been named committee chairmen for the New Chapter of the Society of Cosmetic Chemists, it was announced recently by Harry Isacoff, NYSCC chairman and coordinator of aerosol research for van Amer-

Discussing details of Arizona's contest are C. W. Kohlman, advertising manager, left; Henry Zeni, sales manager, center, and the late Albert Scharwachter, executive vice-president, who was killed in Florida last month.



an international success!

Within a year of its introduction, *Versalide,* Givaudan's outstanding new polycyclic musk, has met with international acceptance! Perfumers throughout the world of fragrance have recognized in its versatility and unique combination of advantages a whole new field of opportunity for creative perfumery.

Versalide lends to a perfume all the enhancement, sweetness, strength, fixation and blending properties expected only from the macrocyclic musks, and yet at a fraction of their cost.

A pure chemical body, not a mixture, *Versalide* is economical — stable to light, heat, air, alkali; and does not discolor soap. And its versatility is practically unlimited!

We will gladly send you a sample and more detailed information.

*Reg. U.S. Pat. Off.

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.
330 West 42nd Street, New York 36, N. Y.

Officers and committee chairmen for 1958 at recent executive committee meeting of the Society of Cosmetic Chemists, New York Chapter, left to right, seated: Marti Zeitlin, Revlon, Inc., secretary; Harry Isacoff, van Ameringen-Haebler, Inc., chairman; Theodore Ostrowski, Monteil Manufacturing Co., chairman-elect; Herbert Edelstein, Bonat & Bonat, education; Martin Katz, Revlon, Inc., by-laws; Maria Wiener, Fluid Chemical Co., public relations. Standing, Robert Warburg, Bristol-Myers, house; Irving Kolbert, N. I. Malmstrom & Co., membership; Vincent Defeo, Dodge & Olcott, Inc., treasurer; George Kachagian, Dow Corning Corp., entertainment; John Longfellow, Colgate-Palmolive Co., program; Saul A. Bell, Prince Matchabelli, publicity; Nicholas Accousti, R. H. Macy & Co., hospitality. Absent is Arthur J. Cohane, Leberco Laboratories, chairman, interprofessional relations committee.

ingen-Haebler, Inc., New York:

John M. Longfellow, Colgate Palmolive Co., program chairman; Robert B. Warfield, Bristol-Myers Co., house chairman; Irving Colbert, N. I. Malmstrom & Co., membership chairman; Saul A. Bell, Prince Matchabelli, publicity chairman; Mrs. Maria Wiener, Fluid Chemical Co., public relations chairman; Herbert Edelstein, Revlon, Inc., education chairman; George Kachajian, Dow Corning Corp., entertainment chairman; Martin Katz, Revlon, Inc., by-laws chairman; Nicholas J. Accousti, R. H. Macy & Co., hospitality chairman; Arthur J. Cohane, Leberco Laboratories, interprofessional relations chairman; Warren B. Dennis, Jr., Lady Esther Division of Chemway Corp., ex-officio chairman.

★

Glass Container Rise

Sales of glass containers will grow by three to five per cent in 1958 above the 20 billion record reported for 1957, according to Arthur W. Wishart, president of Knox Glass Inc., Knox, Pa. Speaking at a regional stockholders meeting, Dr. Wishart said that Knox itself anticipates an increase in sales volume of between five and 10 per cent over last year's dollar volume of $32,699,145. He based his optimism for the company on the installation of new facilities at existing plants and on the opening of a new plant in New England in early summer, on improved efficiency by automation, and on the ready availability of the firm's new lightweight glass.

★

Wexler to Be Honored

Irving Wexler, president of Buckingham Wax Co., Long Island City, N. Y., will be honored at a testimonial dinner to be held Mar. 22 by Congregation Beth Israel. The dinner is being tendered Mr. Wexler in recognition of his leadership in community affairs.

In a letter announcing the dinner, Abraham J. Schwartz, dinner committee chairman, stated that Mr. Wexler is being honored because of "his years of devotion to community affairs, and his leadership and most generous financial contributions to the United Jewish Appeal, State of Israel bond drives, the Federation of Jewish Philanthropies and the Jewish Theological Seminary.

In addition, Mr. Wexler is one of the founders of the Long Island Jewish Hospital, a member of the board of the Queens County United Cerebral Palsy Fund, a director of the United HIAS Service and a member of the board of directors of Yeshiva University.

Irving Wexler

★

Lever Appoints West

Appointment of Arch C. West as merchandising manager of the foods division of Lever Brothers Co., New York, was announced recently by Robert McDonald, division general manager. Mr. West succeeds Mr. McDonald, who was named to his present post a short time ago.

For the past three years, Mr. West had been with Young & Rubicam, Inc., where he was merchandising executive on the General Foods account. Previously he had been associated with Comstock Canning Co., as manager of sales and advertising and a director of the company.

Quality Tested

For no-rub waxes with greater shelf-stability

plus gloss scuff resistance durability leveling anti-slip

#65 *Refined white **shellac***

Leading manufacturers of water emulsion waxes and polishes have adopted Mantrose shellac because of its high quality, uniformity and stability.

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Agents and warehouse stocks in principal cities:

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Montreal 24, Canada

Allied Basic Chemical Co.
Toronto 12, Canada

Aurelio Wagner
Havana, Cuba

Ivan T. Bauman Company
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St. Louis 2, Mo.

Harry Holland
10600 Puritan Ave.
Detroit 38, Michigan

O. L. West
50 East Wynnewood Rd.
Wynnewood, Pa.

Cuyahoga Chemical Co.
2560 West 3rd Street
Cleveland, Ohio

Charles H. Little, Jr.
3182 Peachtree Road, N.E.
Atlanta, Ga.

H. C. Ross
2128 N. Rosemead Blvd.
El Monte, California

Harry Holland & Son, Inc.
Chicago 6, Ill.

R. L. Kelley
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J. M. Washburn Co.
P. O. Box 121
Arlington 74, Mass.

Palmer Supplies Co.
Times Star Bldg.
Cincinnati 2, Ohio

E. M. Walls Company
San Francisco, Cal.

Carbide Names Two Reps.

Edwin M. Miller has been appointed "Crag" agricultural chemical sales representatives in

E. M. Miller

F. A. Pastor

the Mid-Atlantic and Southeastern states for Union Carbide Chemicals Co., New York, it was announced last month. Mr. Miller formerly was New York-New England representative for "Crag." He will be succeeded in that capacity by Francis A. Pastor, who recently returned to the company after two years in military service.

In his new post, Mr. Miller will headquarter at Winchester, Va. His territory will include New Jersey, Pennsylvania, Delaware, Maryland, West Virginia, Virginia and North Carolina. Mr. Pastor joined the firm in 1956 and was a member of the "Crag" sales group before entering service.

★

Stuckart to Babbitt

Thomas E. Stuckart has joined B. T. Babbitt, Inc., New York, as field sales manager, it was announced recently by Marshall S. Lachner, president. Mr. Stuckart comes to Babbitt after nine years as assistant manager of the sales service department of Colgate-Palmolive Co., New York. In his new capacity, Mr. Stuckart is in charge of all field sales personnel.

★

Emery Acquires Vopcolene

Emery Industries, Inc., recently announced the acquisition of the Vopcolene Division of Vegetable Oil Products Co., Los Angeles, manufacturer of a wide line of fatty acids, for an undisclosed sum. According to A. W. Schubert, executive vice-president of Emery, the transaction will become effective Apr. 1, and will include the entire property, production facilities and tradenames of Vopcolene. No changes in personnel are contemplated and the operation, which will become the Vopcolene Division of Emery Industries, Inc., will remain under the direction of Carl Williams, present general manager.

★

Buys Pynol Equipment

Newman Tallow and Soap Machinery Co., Chicago machinery dealers, recently announced it had acquired all of the equipment of Pynol Soap Co., Burlington, Ia. The Pynol equipment has been moved to Newman's Chicago warehouse and is ready to be sold. Pynol manufactured bar, flake and powdered soaps as well as detergents.

★

ASR Earnings Higher

ASR Products Corp., (formerly American Safety Razor Co.) Staunton, Va., recently reported a substantial increase in sales and earnings in 1957. Net sales totaled $28,209,058, as compared with $21,769,129 in 1956. Net income amounted to $1,383,843, equal to share earnings of 91 cents. This compared with $938,550 and 62 cents in 1956. ASR manufacturers soaps, cosmetics and a variety of shaving products.

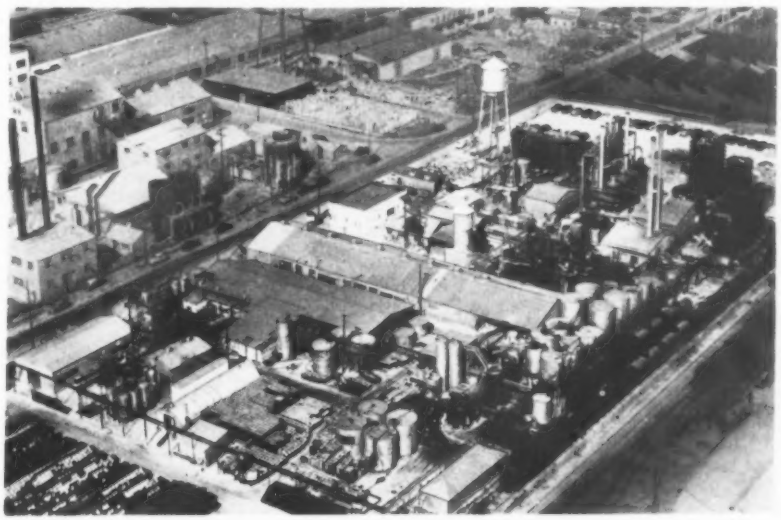
Tyriver Joins Babbitt

Robert E. Tyriver has joined B. T. Babbitt, Inc., New York, as manager of chain store sales, it was

Robert E. Tyriver

announced recently by Michael P. Frawley, executive vice-president. Mr. Tyriver will call on Babbitt distributors in all parts of the country, including chain store buyers, jobbers and brokers. Formerly with Chesebrough-Pond's, Inc., New York, where he was western regional manager, Mr. Tyriver has served with several other soap and toilet article manufacturers, including Yardley of London, Inc., New York, Allen B. Wrisley Co., Chicago, Manhattan Soap Co., New York, now part of Purex Corp., Ltd., South Gate, Calif., and Colgate-Palmolive Co., New York, where

Aerial view of Vopcolene Division of Vegetable Oil Products Co., Los Angeles, which was acquired recently by Emery Industries, Inc., Cincinnati. Sale included company name, trademarks and manufacturing facilities.



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How can you *tell* your present customers you are doing everything possible to continue to give them the finest product that can be made? How can you *sell* your potential customer in the crowded, competitive market places of today?

One way to both tell and sell is by adding that extra touch that immediately marks your product outstanding . . . a pleasant fragrance! Industrial Odorants are compelling sales aids, important tools for the modern businessman with a merchandising point of view. If you manufacture . . .

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. . . the D&O Industrial Odorants Labs can give you a powerful ally for increased sales. Consult D&O.

Essentially for you

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OUR 159th YEAR OF SERVICE

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Sales Offices in Principal Cities

Perfume Bases
Essential Oils
Aromatic Chemicals
Flavor Bases
Dry Soluble Seasonings

for 20 years he was eastern regional manager in the toilet articles department.

—★—

New Acid Inhibitor

A new powdered acid inhibitor for incorporation into metal cleaning compounds was introduced early this month by Sole Chemical Corp., 27 East Monroe Street, Chicago 3. "Sole-Onic PH-1" is compatible with dry acid formulations based on sulfamic, citric, oxalic, etc., and with liquid acids such as hydrochloric, sulfuric, phosphoric, and others. The inhibitor is suitable for use on ferrous and non-ferrous metal surfaces. Said to be free from hazardous or toxic substances it is suggested for formulation of dairy food equipment cleaners and for acid and milkstone removing compounds. Another application is in inhibited acids for use on ion exchange, boiler, air conditioning and water treating lines. A number of industrial uses are suggested. The product comes in 50, 100, and 300 pound polyethylene fiber drums. It is fully described in Sole's technical bulletin #258-1.

Record Soap and Detergent Sales in 1958

THE combined soap and synthetic detergent market in the United States is still beating its own records although it shows a tendency toward levelling off. Total sales in 1957 amounted to 4,104,675,000 pounds valued at $998,115,000, compared with 3,975,139,000 pounds and $913,532,000 in 1956. This represents a 3.3 per cent increase in tonnage and 9.3 per cent in value. Tonnage growth in the previous 12 months period was 8.4 per cent. These figures, collated by the Association of American Soap and Glycerine Producers from reports by member companies, indicate that the annual per capita consumption of soaps and synthetics in the United States is 28½ pounds.

Synthetics now account for 71 per cent of the total market with sales of 2,915,766,000 pounds valued at $683,590,000, an 8.4 per cent increase in tonnage and 14.4 per cent increase in value over the 1956 figure.

Liquid synthetic detergents continue to soar. Their sales in 1957 amounted to 363,480,000 pounds, a 40 per cent increase over the previous year.

Soap sales are down 7.5 per cent in tonnage to 1,188,909,000 pounds, but dollarwise they dropped only one half per cent, to $314,525,000. Toilet soaps continued to show an upward trend with a 5.1 per cent increase in tonnage and 9.8 per cent in value over 1956.

Soap shampoo sales are off 51.8 per cent and detergent shampoo declined 4.7 percent, which leaves the shampoo picture wide open to speculation.

Turning briefly to the fourth quarter of 1957 one finds combined sales of soaps and synthetics at 959,481,000 pounds and $237,234,000, up over the corresponding quarter of 1956 by 4.1 per cent in tonnage and 12.3 per cent in dollars below the third quarter of 1957, 16.8 per cent in tonnage and 16.4 per cent in value. Soap sales in the fourth

Soap and Detergent Sales for 1957-1956

	Pounds		Dollars	
	1957	1956	1957	1956
Soaps other than liquid	1,157,757,000	1,251,224,000	308,214,000	308,616,000
Liquid soaps	3,894,000*	4,236,000*	6,311,000	7,475,000
Total	1,188,909,000	1,285,112,000	314,525,000	316,091,000
Bar toilet soaps, incl. mechanics	532,071,000	506,156,000	175,942,000	160,249,000
Yellow and other than white laundry bars	44,666,000	55,791,000	5,195,000	6,454,000
White laundry bars	142,094,000	168,020,000	27,879,000	30,174,000
Soap chips and flakes, pkgd.	42,720,000	60,003,000	14,349,000	16,939,000
Soap chips and flakes, bulk	103,317,000	105,962,000	12,227,000	12,344,000
Soap, granulated, sprayed, bulk	78,916,000	90,847,000	9,707,000	10,526,000
Soap, granulated, sprayed, pkgd.	154,281,000	194,529,000	42,645,000	48,742,000
Washing powders, pkgd.	2,339,000	3,833,000	220,000	383,000
Washing powders, bulk	12,788,000	15,706,000	1,196,000	1,292,000
Hand pastes	4,964,000	6,718,000	584,000	865,000
Hand powders	6,767,000	7,961,000	1,115,000	1,326,000
Paste and jelly soaps (potash and other)	14,133,000	14,997,000	1,976,000	2,009,000
Shaving soaps	3,040,000	3,581,000	2,141,000	2,447,000
Shaving creams	14,479,000	15,476,000	12,809,000	14,579,000
Soap shampoo, liquid, pkgd.	3,815,000*	4,072,000*	5,553,000	6,208,000
Liquid soaps, other than pkgd. shampoo	79,000*	164,000*	758,000	1,267,000
Misc. or other soaps	1,183,000	1,644,000	229,000	287,000
Detergents, solid	2,552,286,000	2,430,671,000	554,372,000	494,472,000
Detergents, liquid	363,480,000	259,656,000	129,218,000	102,969,000
Total	2,915,766,000	2,690,327,000	683,590,000	597,441,000
Detergents, solid, other than shampoo, pkgd.	2,365,085,000	2,153,474,000	525,635,000	460,493,000
Detergents, solid, other than shampoo, bulk	172,080,000	261,921,000	19,806,000	24,291,000
Detergents, liquid, other than shampoo, pkgd.	36,800,000*	26,512,000*	111,515,000	84,475,000
Detergents, liquid, other than shampoo, bulk	7,718,000*	4,909,000*	6,893,000	6,057,000
Detergent shampoos, liquid	917,000*	1,036,000*	10,810,000	12,437,000
Detergent shampoos, solid	15,121,000	15,276,000*	8,931,000	9,688,000

*Expressed in gallons

quarter of 1957 were 268,319,000 pounds valued at $72,621,000; sales of synthetics amounted to 691,-162,000 pounds and $164,613,000. Amount of soap sold during the fourth quarter of 1957 was 9.3 per cent below the fourth quarter of 1956 and 19.3 per cent below the figure for the third quarter of 1957. About 10.4 per cent more synthetics were sold than in the last quarter of 1956, but 15.8 per cent less than in the third quarter of 1957.

★

Whinfrey to Great Lakes

Charles G. Whinfrey, Jr., has been appointed sales manager for Great Lakes Solvents, Inc., Chicago. Mr. Whinfrey formerly was manager of northern agricultural chemical operations for Pennsalt Chemicals Corp., Philadelphia. In his new post, Mr. Whinfrey will direct sales for Great Lakes' full line of chemicals, aromatics and naphthas. He will also manage the firm's agricultural chemical compounding facilities.

Charles G. Whinfrey, Jr.

★

New Trask Can. Branch

Arthur C. Trask Co., Chicago, manufacturers of chemical specialties, and processed oils, has established a new Canadian branch office at 67 Farningham Crescent, Toronto 18, it was announced last month. The new office will operate under the direction of W. H. McLeod, vice-president, who has been associated with the Canadian chemical and extract field since 1932.

★

Guenther Returns

Dr. Ernest Guenther, vice-president and technical director of Fritzsche Brothers, Inc., New York, returned to the United States earlier this month from a one-month trip to Europe where he presented a program of two lectures before the British Aromatic Compound Manufacturers Association. The lectures, which were given in the Assembly Room of the Royal Empire Society, London, Feb. 13, included material on the California citrus industry, peppermint production in Oregon, Mexican oil and West Indies nutmeg, and films and slides taken during his recent tour of the African essential oil industry. After leaving London, Dr. Guenther visited Belgium, France and Germany.

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Compounds and blends made to your specifications

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Refinery: Mamaroneck Chemical Div., Mamaroneck, N. Y.

CERITA WAXES

Top American Home Profits

American Home Products Corp., New York, last month reported record income and earnings during 1957. Net income rose sharply to an all-time high of $38,617,510, equal to share earnings of $5.03, from $31,250,355 and $4.07 in 1956. Total sales amounted to $372,354,746 in 1957. This compared with $317,258,976 in the previous year.

★

Canzoneri New Marion Rep.

George S. Canzoneri of American Associates, 520 Fifth Ave., New York 36, has been appointed exclusive sales representative in New York, Connecticut and northern New Jersey for Rapids Machinery Co., Marion, Ia., manufacturers of a wide line of mixing equipment. Mr. Canzoneri also is sole representative in the United States for Meccaniche Moderne, Busto Arsizio, Italy, manufacturers of soap mixing and blending equipment.

★

Velsicol Appoints Schweiker

George C. Schweiker has been named research manager for Velsicol Chemical Corp., Chicago, it was announced recently by Dr. W. P. Utermohlen, Jr., research director. In his new post, Dr. Schweiker will be responsible for basic research programs for industrial and agricultural chemicals, polymers and other organic processes. Dr. Schweiker comes to Velsicol from Hooker Electrochemical Co., Niagara Falls, N. Y., where he served as supervisor of polymer research.

George C. Schweiker

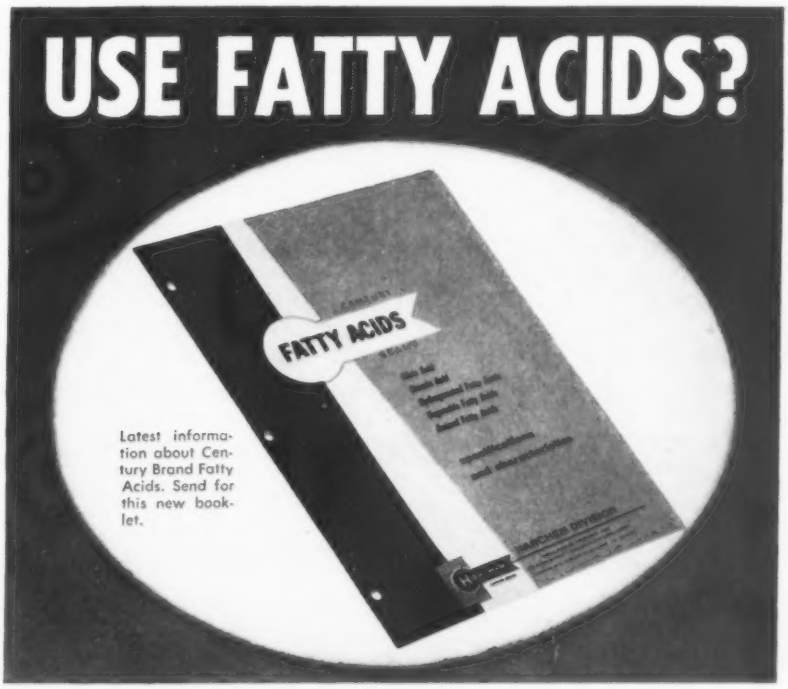
★

Victor Sales Increase

Victor Chemical Works, Chicago, recently reported a slight increase in sales and earnings during 1957. Net sales totaled $52,188,973, compared with $50,146,655 in 1956. Net income amounted to $3,671,031, equal to share earnings of $2.03. This compared with $3,667,266 and $2.02 in 1956.

Ralph W. Hupfer Retires

Ralph W. Hupfer, for more than 30 years a member of the Cambridge, Mass., sales office of Archer-Daniels-Midland Co., Minneapolis, retired Jan. 31. Mr. Hupfer joined ADM in 1928 when it purchased American Linseed Co., of which he was assistant district manager. He remained in that post until 1936 when he was named New England district manager. Since 1954, he had served as technical sales representative.



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If you use Fatty Acids you will want Harchem's new publication of specifications and characteristics for their Century Brand Fatty Acids. Harchem gives you the latest data about all grades in their complete line of uniform quality fatty acids. You are the best judge of the type and grade you need. By using this information as a basis for comparison, you can select the fatty acid best suited for your specific use.

Harchem offers you a free type sample of the kind and grade Century Brand Fatty Acid you specify. We invite you to make comparisons with any competitive product of like grade.

Write us on your letterhead for a copy of our new publication. Ask for Bulletin H-29.

HARCHEM CENTURY BRAND

HARCHEM DIVISION

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25 MAIN STREET, BELLEVILLE 9, NEW JERSEY
IN CANADA: W. C. HARDESTY CO. OF CANADA, LTD., TORONTO

Cowles Acquires "Sted"

Cowles Chemical Co., Cleveland, recently announced the purchase of "Sted," a commercial laundry detergent, from Monsanto Chemical Co., St. Louis. The transaction includes manufacturing and marketing rights of the product, trade name, and sales personnel employed by Monsanto. Part of the raw materials required for manufacture of the product will continue to be produced by Monsanto. "Sted" is a low-sudsing detergent used primarily in self-service and commercial laundries, hospitals and the military.

—★—

NPCA Weed Control Group

National Pest Control Association recently announced the appointment of an exploratory committee on weed control. At present the association does not cover weed control, but some of its members engage in this type of work. The committee has been set up to study the question and make recommendations on the desirability of NPCA's covering this field.

Executives of Krylon, Inc., world's largest manufacturer of aerosol spray paints, examine new Krylon sales promotion material at the company's sales meeting held recently for eastern and Canadian sales representatives. From left to right: Elmore E. Kayser, advertising and promotion manager; James W. Bampton, president; Richard C. Newbold, vice-president, sales; and Brenton T. Morse, vice-president and treasurer. Similar sales meetings, outlining company plans and policies for 1958, were also held in Chicago and San Francisco for midwestern and western representatives.

—★—

Fritzsche Honors Crouch

Stanley Crouch, manager of the Los Angeles office of Fritzsche Brothers, Inc., New York, was honored Feb. 11 at a company dinner party in commemoration of 25 years of service with Fritzsche. Mr. Crouch, who became the 71st member of the quarter-century club, was presented with a U.S. Government Bond. Prior to coming to Fritzsche, he represented the St. Louis firm of Barada & Page, which then handled the firm's line of essential oils in that territory.

ULTRAGRAM

(up-to-date information on detergents, wetting agents and foaming agents)

ALL ABOUT:

SODIUM XYLENE SULFONATE

a solubilizing hydrotrope for light- or heavy-duty built detergents

- a coupling agent and low-temperature solubilizer for heavy-duty liquids with high phosphate content
- a solubilizer and cloud-point depressor for light-duty liquid detergents
- a conditioner and anti-blocking agent in spray-dried detergents

ULTRA "SXS" is available in 85% active dry form, and as a 40% liquid for tank-truck and tank-car shipment from Paterson and Chicago plants. Send for data sheet.

Headquarters for all your detergent needs

ULTRA CHEMICAL WORKS

Division of Witco Chemical Company

2 Wood Street, Dept. S-3, Paterson, N. J.

Automotive Survey

(*From Page* 119)

lion passenger cars and trucks registered at the time. Approximately 11,200,000 units of cooling system sealers were reported, enough to mend radiator leaks in about 19 per cent of the vehicles.

A total of 26,900,000 consumer units of automobile polishing and cleaning compounds were produced in 1956. This excludes straight wax products and chromium cleaners. Based on an estimated passenger car registration of 54 millions this figure represents about one-half can of polish/cleaner per car per year.

Straight wax products were produced at the rate of 5,460,000 during 1956, representing an annual use of one-tenth of a can per car.

Middle Sized Research

(*From Page* 183)

velopment, market research, advertising and publicity, and sales. Research projects may fail not only in the laboratory but in any one of these other groups. Top management must ensure that each link in the chain is staffed and equipped to support company objectives in research. For example, it is useless to have a laboratory group work out new methods for the production of low-cost bulk chemicals unless the company has, or is prepared to acquire, the strong engineering and manufacturing groups required to put research results of this type into practice.

Top management must also ensure that the work of these different groups is carefully coordinated in each individual project. Where a new product or application is unfamiliar or complicated, effective coordination generally requires a project supervisor for day-to-day management. Sometimes special bridge groups must be created. For instance, the transition of a new product from research to sales generally requires a man or group to carry out the commercial development and introductory marketing of the product.

Disagreements or disputes between various groups must be resolved quickly. It has been well said that no new products are born out of deadlock. If the project supervisor cannot bring about an agreement, the dispute must go to the company management as soon as possible. The dangers of long-standing disagreement were illustrated strikingly in a middle-sized company producing raw materials. This company had a strong and highly technical sales development group, and the research program was entirely devoted to creating new applications for the company's products. Unfortunately the research laboratory and the sales development department disagreed on the basic strategy for developing new applications. The problems involved were highly technical and neither the president nor the executive vice-president felt qualified to resolve them. As a result several years time and a great deal of money were wasted and eventually the better people in both the laboratory and sales development departments left the company.

To keep research results flowing from the laboratory to the other groups in the development chain, company management must avoid such diversions from established research objectives as undue stress on laboratory income or patents. Income creeps into research in the insidious forms of government contracts or sales from pilot-plant operations. Naturally any income received reduces the total cost of laboratory operations. Sometimes this advantage makes laboratory groups continue work on outside contracts at the expense of research of more direct benefit to the company. Similarly, research groups sometimes hold on too long to pilot-plant production of new products when income from sales is credited to research.

Patents are essential to protect the unique accomplishments of any research program. They are also a source of prestige for the inventors and a mark of accomplishment for the laboratory, certified by an outside authority. But sometimes these secondary benefits divert laboratory groups from their real objectives. Patents are a vital support for saleable products, usable processes or marketable uses, but they are not a substitute. Similarly the publication of technical articles, work in technical and trade associations, and other means of achieving prestige in the scientific world can also become an unwarranted diversion if carried to excess.

The coordination of research and development is always complex, and a great many systems and procedures have been developed to simplify the problem. Many of these are of doubtful value in a middle-sized company. Elaborate presentations and procedures sometimes become a diversionary activity in themselves. Quick decisions by management are often more important than formal systems. Research ideas and proposed new projects should be thought through and decided upon as soon as possible. When a great deal of elaborate preliminary work is required, there is a real danger that, in the process of collecting all the technical data, market surveys and cost estimates required, enthusiasms and vested interests will build up that may lead to bitterness and frustration if the project is rejected.

The best systems provide for early decisions on new projects, periodic review of overall research progress by top management, effective day-to-day supervision of each project and frequent discussions with sales, manufacturing and other functions to ensure effective coordination. In the middle-sized company, these procedures can usually be devised so as to require the minimum of paperwork or committee organization.

Profits from Risks

THE record of many companies shows that research can be carried out successfully and profitably on a middle-sized budget. However, company managements and research directors alike must recognize that every research project is a calculated risk. Careful direction and good understanding of the special problems of middle-sized research can reduce the risks – perhaps from those of Russian Roulette to those of poker – but they cannot eliminate them.

As Reader Sees It

(*From Page* 43)

cause it is so obviously false. However, he left it to an A.M.A. hack release writer to do the dirty work.

—★—

Michigan Chem. Sales Up

Michigan Chemical Corp., St. Louis, Mich., recently reported a sharp increase in sales and earnings during 1957. Net sales totaled

LIVESTOCK SPRAYS that REALLY WORK!

WHEN YOU FORMULATE WITH

Tabutrex* INSECT REPELLENT

TABUTREX insect repellent is approved for use on lactating dairy cattle, beef cattle, horses, pigs, etc. With TABUTREX there's no danger of residues in meat . . . won't contaminate milk !

TABUTREX sprays keep flies away from livestock. Most sprays kill flies *after* they bite . . . with TABUTREX flies won't light, so they can't bite !

TABUTREX repels House flies, Stable flies, Horn flies, even the giant HORSE FLY!

TABUTREX tests on thousands of cattle conclusively show substantial increases in milk production and weight gain!

TABUTREX is compatible with insecticides for use on livestock. It can be used in sprays or backrubbers! It can be applied as an oil solution! It can be applied as a water emulsion!

Register your TABUTREX label NOW so you can meet the demand!

WRITE FOR FULL INFORMATION
AND APPROVED
JOHN DOE LABELS

Tabutrex* INSECT REPELLENT

Glenn Chemical Company
2735 N. Ashland Avenue
Chicago 14, Ill.
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*Trademark

$9,571,000 as compared with $6,641,000, in the previous year. Net income amounted to $752,814, equal to share earnings of $1.09. This compared to $356,402 and 66 cents in 1956.

—★—

Chlordane Promotion

A new seven-point dealer-support sales program was announced recently by Velsicol Chemical Corp., Chicago, on behalf of its chlordane insecticide. The program, which is currently being offered by Velsicol to garden supply retailers, features seven ways in which the company will provide support to dealers handling its chlordane line.

Highlights of the program, which is designed to meet the needs of distributors in all parts of the country, include: an educational salesmen's insect control refresher course, for all dealer sales personnel; monthly insect control information service; a $10,000 "Show and Sell" sales incentive contest; free advertising support in local areas; advance copies of chlordane promotional material; consumer reference list of chlordane sources of supply, including participating dealers; and the Velsicol award for outstanding insecticide merchandising.

L. E. Carls, advertising manager, has urged that all dealers desiring to participate in the program, forward their entries to Velsicol without delay in order to obtain maximum benefits for the peak of the insecticide selling season. The entire program is offered free of charge. Complete information is available from Velsicol Chemical Corp., 330 East Grand Ave., Chicago, 11.

—★—

Reis Returns to U. S.

Waldo F. Reis, vice-president of van Ameringen-Haebler, Inc., New York, returned from Europe last month, where he inspected the production facilities of the company's subsidiary, van Ameringen-Haebler, S.A.R.L., Paris. The Paris plant was recently expanded to facilitate overseas distribution of the company's product lines to the soap, cosmetic and fragrance industries.

—★—

Cowles Sales Increase

Sales and earnings of Cowles Chemical Co., Cleveland, showed a slight increase in 1957, according to a financial statement released recently by the company. Net sales totaled $6,746,897, compared with $6,184,769 in 1956. Net income rose to $247,813, equal to share earnings of $1.33, from $195,410 and $1.05 in 1956.

Miss Arlene Logioco, president of Jatnik Chemicals, a junior achievement company sponsored by Givaudan-Delawanna, Inc., New York, displays a gold plaque emblematic of first prize in Junior Achievement Contest held by Passaic Chapter of Kiwanis. Presentation of winning award was made at Passaic YMCA by Dr. Borris R. Kaufman, Kiwanis chairman of education and social action committee. Included among Jatnik's group achievements were the introductions of two new products, "Wiz-A-Way," a waterless hand cleaner, and "Wiz-A-Squeak," an aerosol lubricating oil, said to be the first aerosol product to be successfully prepared by a junior achievement firm. The plaque will be on display at Givaudan's offices.

Fleuroma Expands Staff

The appointment of Dr. Jerome G. Kaufman as head of its expanding chemical research and development division was announced last month by Fleuroma, Inc., New York perfuming materials firm. Dr. Kaufman, formerly with Felton Chemical Co., Brooklyn, has been in the organic chemical industry for over 20 years. He will be responsible in his new post for carrying forward Fleuroma's continuing development program of new aromatic bodies.

Jerome J. Kaufman

The company's staff of perfumers, under the direction of Walter Lengsfelder, has also been expanded. Jean-Paul Baude, who has been in the perfume industry in both France and the United States for the past 25 years, and George Neil, also a quarter century industry veteran, have joined Charles Berger and Henry Weiner as perfumers with Fleuroma.

★

BIMS Re-Elects Harris

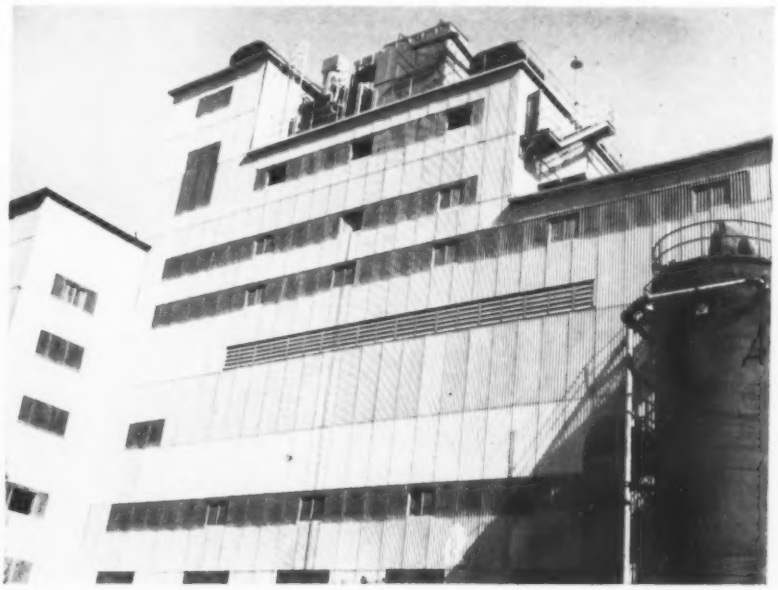
The Buyers Importers Manufacturers Salesmen of Boston has re-elected Hart Harris, Jr., of S. B. Penick & Co. as chairman, it was announced recently. Mr. Harris reported that the organization's fifth annual Ladies' Night will be held at the Weston, Mass., Golf Club, Apr. 12. The occasion will feature bowling, dancing and prizes for the ladies.

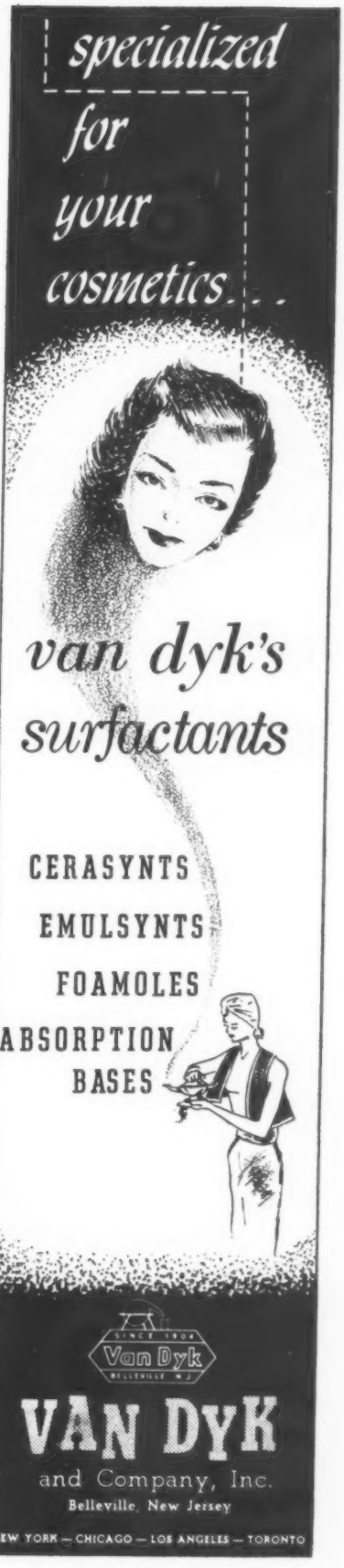
★

New Solvay La. Plant

Construction of a new soda ash plant at Baton Rouge, La., was announced last month by Solvay Process Division of Allied Chemical & Dye Corp., New York. The new facilities more than double the soda ash production capacity at Solvay's Baton Rouge unit, according to I. H. Munro, president. The new plant is equipped for shipping

New soda ash plant, recently constructed at Baton Rouge, La., by Solvay Process Division of Allied Chemical & Dye Corp., New York, will more than double the previous capacity of the unit. This is the fourth expansion of soda ash production facilities since Solvay began operations at Baton Rouge in 1935.





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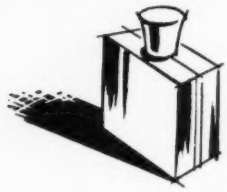

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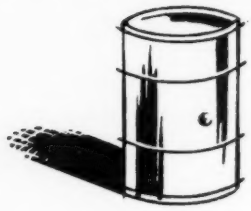

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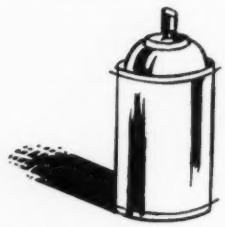

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soda ash by either rail, truck or water. This is the fourth expansion in production capacity since Solvay began operation of the Baton Rouge facilities in 1935. Other Solvay soda ash plants are located at Syracuse, N. Y., and Detroit.

—★—

FTC Accuses "Lestoil"

Adell Chemical Co., Holyoke, Mass., was accused by the Federal Trade Commission last month of failing to label its "Lestoil" detergent as being flammable. For the first time the FTC used pictures of television commercials to prove that the company failed to reveal in its advertising that the product is "dangerously flammable."

"Lestoil", according to the FTC complaint, "possesses a dangerously low flash point, will vaporize to a flammable mixture under many conditions commonly encountered when used according to directions, and will thereby create a definite fire hazard."

A hearing on the complaint is scheduled to be held in Boston on April 8.

Lipscomb Guest Speaker

Charles T. Lipscomb, Jr., president of the Bureau of Advertising of the American Newspaper

Charles T. Lipscomb, Jr.

Publishers Association, will be featured speaker at the fourth annual Men's Day Luncheon of Cosmetic Career Women to be held at the Empire Room of the Waldorf-Astoria Hotel, New York, Apr. 1. Mr. Lipscomb formerly was president of J. B. Williams Co., Glastonbury, Conn., and earlier headed the Pepsodent division of Lever Brothers Co., New York.

New automatic timing device, developed recently by Sun Tube Corp., Hillside, N. J., aerosol valve producing subsidiary of American Can Co., New York, is said to eliminate the possibility of human error in testing discharge rates of aerosols. Designed to control discharge for any predetermined period from one to 30 seconds, the unit is believed to be the first of its kind in the field.

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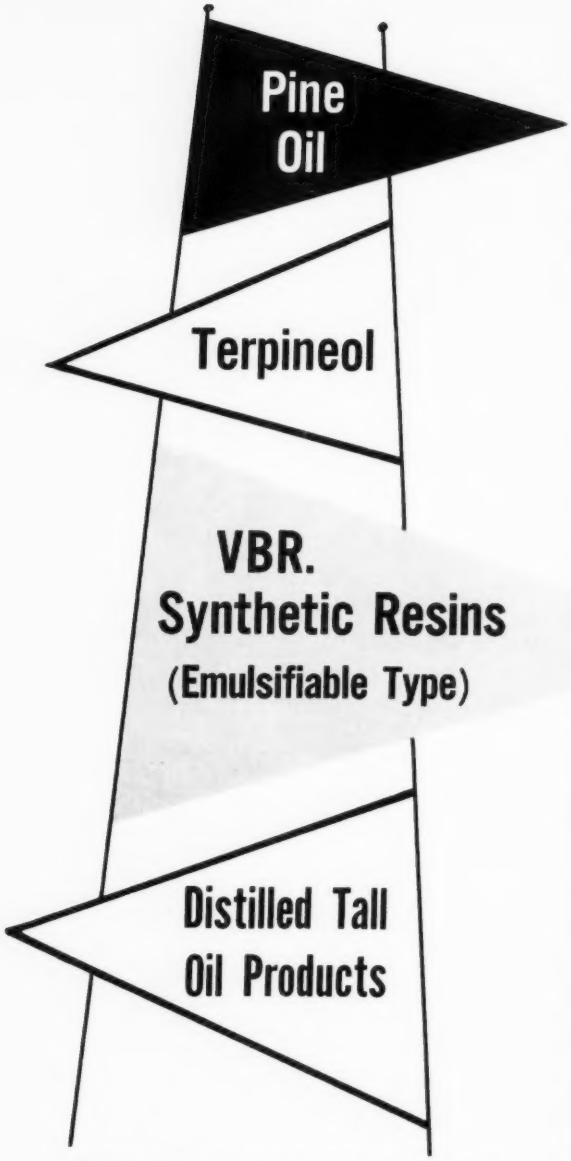

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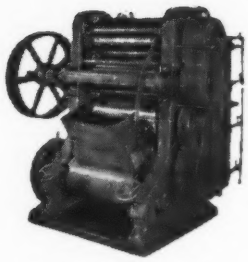

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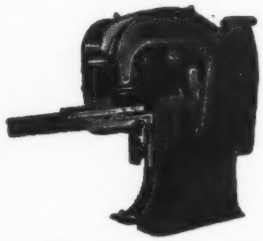

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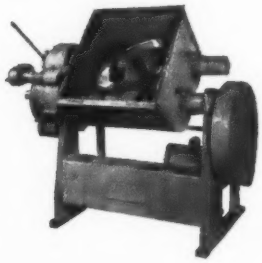

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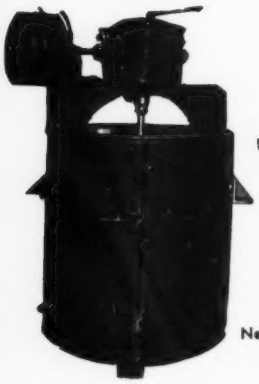

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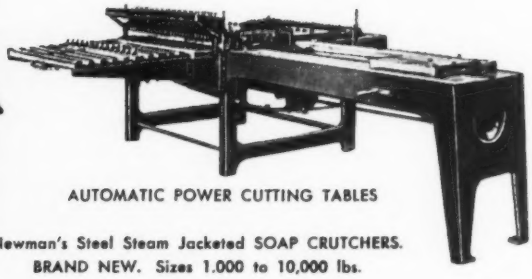

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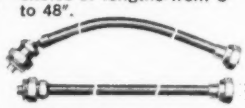

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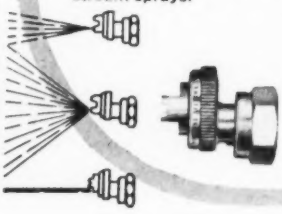

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Wanted: One copy October 1955 issue of SOAP & CHEMICAL SPECIALTIES to complete our file. Address Ing. Alonso Garrido Pharmind de Mexico, S. A., Pino 159, Mexico 4, D. F.

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Purex Dividend

Purex Corp., Ltd., South Gate, Calif., has declared a regular quarterly dividend of 25 cents per share on its capital stock, according to Adrien C. Pelletier, board chairman. The dividend will be paid Mar. 31 to shareholders of record on Mar. 15. The declaration maintains Purex's continuous record of dividends payment since 1936.

Household Soap Sales

(*From Page* 58)

for each basic policy to prove itself right or wrong. Remember, sometimes it takes years for a significant trend to develop.

In some of our studies of new products, it has taken as much as four years to determine their ultimate success or failure. Two years appears to be about the average time required in the food and drug industry to appraise the future of a new item.

Marion Harper of McCann-Erickson once released a study which indicated that two out of three new products failed. One of the main reasons for this we believe is due to: 8. *Failure to test-market new ideas.* The number of products being offered the public today is so large, and the marketing process so complex that it is virtually impossible to foretell in the conference room the success of a new idea.

Experience is always helpful—but conditions change and what worked on one product at one point in time, may not work on another product a year or two later. Under today's conditions there is a big risk involved in any change in product, sales policy, pricing, package, copy theme or media.

Whether a move will work and pay off can only be known after it has been tried. Many of you have learned that there is a big difference in what people *say* they will do—and what they *actually* will do. There's a big difference in what people say they will *buy*, and what they *actually* buy.

It has been our experience that a good number of marketing problems can be solved by means of controlled market tests. For example, we have conducted tests to answer problems of our clients such as these:

Client "A"—"During the introductory advertising period, which is the best way to sample my new product—by couponing? by a tie-in offer with an established brand? or by house-to-house sampling?"

Client "B"—"Which of these two advertising themes will cause the most people to want to buy our products?"

Client "C"—"Will the advantage of being able to demonstrate my product on TV increase my sales volume enough to offset the higher costs of the advertising and increase our profits?"

(*To be continued*)

★

Polyethylene in Polishes

(*From Page* 107)

with a 60° glossmeter, after applying two coats of polishes to pieces of leather and buffing each coat by hand. Note that in every case the set point was again raised and that the gloss was equivalent in every case.

Several suggested formulations are given in Table 9.

Table 9

Suggested Formulations	Parts	Appearance	Gloss
Automobile Polish Cleaner			
Low molecular weight polyethylene (ACP-63)	13	Homogeneous	71 (after buffing)
Silicone (500 CPS.)	8		
Stearic acid	7		
Morpholine	1.7		
Naphtha	100		
Diatomaceous earth*	20		
Water	150		
Liquid Solvent Polish			
Low molecular weight polyethylene (ACP-6)	2.5	Did not separate in 30 days	63 (before buffing) 70 (after buffing)
Silicone (500 CPS.)	1.5		
Naphtha	96		
Aerosol Type Polish			
Low molecular weight polyethylene (ACP-6)	3		
Silicone (500 CPS.)	1.8		
Naphtha	50.2		
Propellant **	45		
Paste Polish			
Low molecular weight polyethylene (ACP-6)	7.5	In the can smooth and glossy	30
Paraffin (Sun 3420)	21		
Ozokerite	0.5		
Mineral spirits	71		
Shoe Polish			
Low molecular weight polyethylene (ACP-6)	6	In the can smooth and glossy	80 (after buffing)
Beeswax	7		
Carnauba N.C. #3	12		
Mineral spirits	84		

* Johns-Manville's "Snow Floss."
** "Genetron 12", General Chemical Division, Allied Chemical & Dye Corp.

Mathieson Earnings Lower

Sales and earnings of Olin Mathieson Chemical Corp., Baltimore, declined slightly in 1957, according to a financial statement released recently by the company. Net sales totaled $592,876,916, compared with $598,107,465 in 1956.

Net income amounted to $36,377,074, equal to share earnings of $2.70. This compared with $44,791,071 and $3.38 in 1956.

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Coming Meetings

American Oil Chemists Society, 49th annual meeting, Peabody Hotel, Memphis, Tenn., April 21-23; short course on soaps and syndets, Princeton Inn, Princeton, N. J., July 14-18.

American Society of Perfumers. Fourth annual symposium, Essex House, New York, Mar. 20.

Association of American Soap & Glycerine Producers, 32nd annual convention, Waldorf-Astoria Hotel, New York, Jan. 27, 28 and 29, 1959.

Chemical Specialties Manufacturers Association, 44th midyear meeting, Netherland Hilton Hotel, Cincinnati, May 19-21; 45th annual meeting, Commodore Hotel, New York, Dec. 8-10.

Committee D-12, Soaps and other Detergents, American Society for Testing Materials, annual meeting, Park Sheraton Hotel, New York, Mar. 10 and 11.

Entomological Society of America, North Central Branch, 13th annual conference, Sheraton-Jefferson Hotel, St. Louis, Mar. 26-28.

Industrial and Building Sanitation Maintenance, third show and conference, Sheraton Philadelphia Hotel and Convention Hall, Philadelphia, Nov. 3-6, 1958.

National Hotel Exposition, Coliseum, New York, Nov. 3-7.

National Packaging Exposition of American Management Association, Coliseum, New York, May 26-30. Packaging Conference, Hotel Statler, May 26-28.

National Pest Control Association, 25th annual convention, Hotel Statler, Washington, D. C., Oct. 20-23.

National Sanitary Supply Association, 2nd western trade show and conference, Fairmount Hotel, San Francisco, Oct. 19-21, 1958; 36th annual convention and trade show, Conrad Hilton Hotel, Chicago, April 12-15, 1959.

Packaging Machinery and Materials Exposition of 1958, Convention Hall, Atlantic City, N. J., Mar. 25-28. Packaging Institute technical session, Room B, Convention Hall, Mar. 24-26. Dinner, Chalfonte Hotel, Mar. 24.

Precautionary Labeling Conference, Manufacturing Chemists' Association, Shamrock Hilton Hotel, Houston, Tex., Apr. 30.

Salesmen's Association of American Chemical Industry, golf outings, May 20, June 26, July 22, Aug. 19 and Sept. 18.

Society of Cosmetic Chemists, spring meeting, Hotel Commodore, New York, June 4.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, April 8; annual outing, Shawnee Inn, Shawnee, Pa., May 26-28.

Toilet Goods Association, 23rd annual convention, Poland Spring House, Poland, Me., June 25-29; scientific section, Waldorf Astoria Hotel, New York, June 5.

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Tale Ends

IF you live in a northern city and are under emotional stress of any kind, the chances are you have dandruff. If you're a high-pressure executive, and you live in Chicago, New York, Philadelphia or Hollywood, you're probably part of the 80% of the population that has dandruff. Also more men have dandruff than women and it gets worse in cold weather. According to the Curtis Dandruff Treatment Council formed to study this age-old vexing problem, which came up with these figures, over $200,000,000 anti-dandruff hair dressings, shampoos and the like are sold yearly to rid scalps of these annoying white flakes. New and better products are available today than ever before to lick the dandruff problem, says the Council.

* * * * *

Orders for chemical products must be harder to get these days because we note with unusual interest that the average salesman of chemical items is driving his car a lot further than he did a year ago. According to Emkay, Inc. of Chicago, large auto fleet leasing concern, much talk of a recession has scared the pants off a lot of salesmen and they have become aware of the need for greater sales efforts. So their car mileage goes up, — up from 1900 miles a year ago to over 2400 miles per month today.

* * * * *

A shampoo consisting of half sodium lauryl sulfate and half beer has been patented in England. Actually the beer content can run up as high as 75 per cent. The inventor states that not only does the beer shampoo lather, clean and rinse better, but that it does away with the need for hair set sprays as well. No mention is made of it being a suitable substitute for a cold bottle before retiring at night. Might be worth looking into.

* * * * *

Story with a somewhat fishy aroma to our way of thinking is being bandied around Cleveland. Seems that a housewife returned a bottle of "Lestoil", the well known pine liquid cleaner, to a market with the complaint that she had deep fried some chicken in it and the taste was nothing to write home about. Noting the "oil" part of the name, "Lestoil", she said she took it for granted it was a cooking oil. As we said before, a good publicity gag, but a trifle on the fishy side.

* * * * *

Well, we note with interest that this "low-calorie shampoo for fatheads" blurb has finally reached Washington. And it is credited to none other than Neil McElroy who is reputed to have said that his old Cincinnati soap company is now working on such a product and that they're going to test it on the Secretary of Defense. Frankly, we don't believe when he first invented the idea of this shampoo for fatheads a couple of years ago that Bayard Johnson, story teller and fast talker of Franklin Research of Philadelphia, ever thought his little gag would reach such a high estate.

If you happened to call Colgate's headquarters in New York on Friday, Feb. 21, a cheery voice told you: "This is the Colgate-Palmolive Company. You are being answered by a paid recording. The office closed Thursday at 4:45 p.m. until 9:00 a.m. on Monday for the George Washington holiday. Have a nice holiday. Thank you." Modern science — it's wonderful.

* * * * *

Cracked Jim Reider, head of George T. Johnson Co., Medford, Mass., and president of the National Sanitary Supply Association during NSSA's annual convention in New York last month: "One of our wax manufacturing members was taken over by a cigarette company recently. Now, everybody is wondering whether the combined outfits will make filtered wax or waxed filters."

* * * * *

Clever promotion piece just received from Rohm & Haas Co., Philadelphia, on behalf of its new "Hyamine 3500", a "hard water" quaternary germicide starts: "If you give a hoot about your sanitizers. . . ." The black cover for the folder features a gray sketch of the head and shoulders of an owl. Peering through two large die-cut eyes are two big yellow eyes, which, when the folder is opened, become the zeroes in the "3500". Real tricky.

* * * * *

A confused Long Island super market advertises two large size boxes of "Tide" SOAP DETERGENT for 58 cents in a recent window sign.

* * * * *

Bob Solly of Harley Soap Co., Philly, held his breath for several days during the National Sanitary Supply Association trade show and convention in New York last month. Harley's booth has a wash stand for demonstrating its "Creamedic" liquid hand cleaner. This requires hot water, which unfortunately the Coliseum is not prepared to furnish to its exhibitors. So, in order to get hot water it was necessary, believe it or not, to install a hot water heater in the booth. The cost? Well, that's why Bob was holding his breath. Other exhibitors at the show, who normally set up their own booths, stood idly by fuming, and worse, as the Coliseum's highly organized though bumbling labor crew went through the slow motions of erecting booths at fancy prices. After 3:30 p.m. time-and-a-half sets in. However, after this rocky start the show turned out so well that most exhibitors forgot their woes — until the bills came pouring in.

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Write Fairfield Chemical Division, Food Machinery and Chemical Corporation, 441 Lexington Avenue, New York 17. Branches in principal cities. In Canada: Natural Products Corporation, Toronto and Montreal.

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